

FLEXIBLE CORRECTION PROCESSES IN SOCIAL JUDGMENT: IMPLICATIONS FOR PERSUASION

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Two experiments were conducted to examine correction for perceived bias in persuasion situations. Study 1 showed that, although a manipulation of source likability had an impact on attitudes when no instruction to remove bias was present, when people were asked to remove any bias from their judgments, the effect of the source likability manipulation disappeared. The fact that the correction instruction did not increase the impact of an argument quality manipulation on attitudes suggested that effort aimed at correction is conceptually distinct from effort aimed at processing a message in general. Study 2 showed that a correction for source likability took place under low elaboration conditions—where a manipulation of source likability had an impact when no correction instructions were provided, and under high elaboration conditions—where a manipulation of source likability had no impact when no correction instructions were provided. In the high elaboration conditions, correcting for an impact that was not actually present led a dislikable source to be more influential than a likable source.

In society today, dealing with bias (both explicit and implicit) has become part of negotiating our social world. Much has been written about the nature of bias and prejudice, and research has addressed issues such as: What are the causes of prejudice? Who is most likely to show bias? Against whom is prejudice directed? Only recently have conceptual and empirical

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efforts been aimed at the issues of when and how people guard against bias when they wish to be unprejudiced in their judgments. Because of changing norms against prejudice, and because of changing laws that forbid bias of *any* type (e.g., anti-discrimination laws as well as anti-affirmative action initiatives), people might increasingly become vigilant in their attempts to avoid unwanted, inappropriate, or illegal biases.

It would be relatively simple if the only factor involved in eliminating unwanted biases was the simple desire to be accurate. Current dual-route models of persuasion, such as the Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986) and the Heuristic/Systematic Model (HSM; Chaiken, Liberman, & Eagly, 1989) hold that when people wish to be accurate, they are often more diligent in examining all available relevant information. Sometimes this enhanced effortful processing appears to eliminate the effects of certain "biasing" variables. For example, when motivation to think about a persuasive message was increased by adding to the personal relevance of the communication or making people accountable for their judgments, the impact of a manipulation of source likability was eliminated (see Chaiken, 1980; Petty, Cacioppo, & Schumann, 1983). This result could have occurred because of a correction process (i.e., people adjusted their assessments of the issue for the perceived biasing influence of the source; Petty & Wegener, 1993; Wegener & Petty, 1995), but it also could have occurred because a person's effortful processing of arguments overwhelmed the impact of the source (Chaiken et al., 1989), or because examining source likability as a piece of issue-relevant information (i.e., treating it as an argument) made people realize that it was irrelevant to the judgment and was thus discounted (see Petty, 1994, for a discussion of these and other possibilities).

Importantly, current research on persuasion indicates that increasing the extent of effortful information processing does not invariably eliminate effects of potential biasing factors. In fact, current research guided by the ELM and HSM clearly suggests that the enhanced processing invoked when motivation and ability to think are high can be quite biased. For example, in one study (Petty, Schumann, Richman, & Strathman, 1993), students were exposed to an advertisement in the context of a program that induced a pleasant or a neutral mood. Motivation to think about the advertisement was varied by manipulating the personal relevance of the product (cf., Petty & Cacioppo, 1979b; Petty et al., 1983). The primary result of this study was that mood influenced (i.e., biased) judgments under both high and low elaboration conditions, but the mechanism was different. Under high elaboration conditions, making the recipients' mood more pleasant led to more favorable thoughts about the product which in turn led to more favorable attitudes. Under low elaboration conditions, however, mood influenced attitudes without affecting thoughts. That is, increasing people's desire to be accurate by adding to the importance of the

judgment did not eliminate or even reduce the biasing impact of mood. Higher levels of elaboration simply led to more thought-based biases (see also, Chaiken & Maheswaran, 1994; Wegener, Petty, & Klein, 1994).

In sum, increasing accuracy motivation and increasing information processing do not necessarily eliminate the effects of biasing variables such as a person's mood, or the likability of a source. In part, to deal with these phenomena and others, the flexible correction model (FCM) was developed (Petty & Wegener, 1993; Wegener & Petty, 1995; 1997). According to the FCM, increasing accuracy motivation, or the motivation and ability to think, does not necessarily lead to correction attempts because even highly thoughtful people are not necessarily aware of the impact of any biasing variable(s) in the current context. According to the FCM, in order for correction for bias to take place, people should (a) be motivated and able to search for potential biases, (b) find a potential source of bias, (c) have or generate a *theory* regarding the direction and magnitude of the bias, and (d) be motivated and able to correct for the bias based on this theory (see Wegener & Petty, 1997; cf. Martin, Seta, & Crelia, 1990; Schwarz & Bless, 1992; Strack, 1992; Wilson & Brekke, 1994).¹

Thus, the FCM hypothesizes that increasing accuracy motivation or increasing the motivation and ability to think per se, will often not be sufficient to invoke correction processes. Of course, increasing the motivation to be accurate alone might often increase motivation to search for bias and correct for it, but sometimes the presence and impact of biasing factors are not salient unless some more explicit attention is drawn to them (cf., Schwarz & Clore, 1983).

One important feature of a model of corrections based on perceivers' naive theories is that opposite theories of bias lead corrections in different directions. That is, if people believe that some biasing factor is making (or would make) their judgment of a target too similar to the context (perception of assimilation bias), they would correct their judgments to be *less* like the context. But, if people believe that some biasing

1. Although we believe that novel corrections generally require some rather explicit awareness of a potential biasing factor, as people become more practiced at particular corrections, corrections themselves might become more implicit (and thus, people might be less aware of the potential biases corrected or of the operation of the bias correction process). Even for novel theory-based corrections, which we conceptualize as relatively effortful compared with lack of correction (see Wegener & Petty, 1997), we do *not* regard corrections as necessarily due to completely conscious processes. That is, even though judges' naive theories of bias often predict the direction and magnitude of corrections (e.g., Wegener & Petty, 1995), this does *not* mean that people would be able to report the processes they used to execute the correction (cf. Nisbett & Wilson, 1977). That is, even if people can verbalize a theory of bias, there can be implicit effects of that theory (see Wegener & Petty, this issue), and people would not necessarily be expected to know which theory(ies) they used more than other theories, for example.

factor is making (or would make) their judgment of a target too distant from the context (perception of contrastive bias), they would correct their judgments to be *more* like the context (for empirical evidence of corrections consistent with the direction and magnitude of people's naive theories, see Petty & Wegener, 1993; Wegener & Petty, 1995; Wegener, Petty, & Dunn, in press).

In our initial attempts to extend the FCM into persuasion settings, we considered two primary research questions: (1) Is effort aimed at removal of bias conceptually distinct from effort aimed at scrutiny of attitude-relevant information? and (2) Can corrections for perceived biases actually reverse the typical cue effect of source characteristics such as likability? Over the last 20 years, various simple cues (e.g., source attractiveness, message length) have been shown to create less impact when scrutiny of the content of persuasive messages is high rather than low (e.g., Axson, Yates, & Chaiken, 1987; Petty et al., 1981; Petty et al., 1983; Wood & Kallgren, 1988). As noted earlier, this might or might not be the case because high elaboration includes removal of the unwanted influences of such cues. We suspect that when people are busy paying close attention to, and thinking carefully about, the merits of information presented, they will sometimes be unlikely to even identify characteristics of the source as biasing factors. If so, source likability might have little impact, not because of corrections for its perceived biasing impact, but rather because of a relative lack of attention to or use of the source characteristics—or because any cue impact of the source is overwhelmed by the reactions to the other available information. Furthermore, if people are relatively unaware of the biasing potential of a source, it is possible that the source's impact could even be increased under high elaboration conditions [e.g., if a likable (dislikable) source leads people to engage in favorably (unfavorably) biased processing; cf., Petty et al., 1993; Chaiken & Maheswaran, 1994]). Finally, if source likability is salient, people might process the likability as an argument and discount it based on its irrelevance to the merits of the advocacy. In none of these instances are people correcting for the perceived biasing impact of source likability.²

Despite the lack of previous attention to correction processes in persuasion, we believe that corrections can operate in these settings and that such

2. Within the ELM, processing source likability for its merit could include an analysis of the potential biasing impact of this variable (as specified by the FCM), but likability could also be discounted just as any other weak argument is dismissed (without considering the potential impact of the information and then adjusting for it). That is, the FCM mechanism is more specific than that outlined by the ELM and thus supplements it (as do other more specific theories postulating both central (e.g., cognitive response theory, expectancy \times value models) and peripheral (e.g., classical conditioning, use of heuristics) mechanisms (see Petty & Cacioppo, 1981; Petty & Wegener, 1998, in press).

processes might bring about some interesting persuasion outcomes. For example, within the FCM framework, corrections aimed at removing perceived biases can sometimes create a bias in the opposite direction (e.g., if people "overcorrect," which might be especially likely if the perceptions of the bias are exaggerated in relation to the size of any actual bias at work), can create biases where there were none previously (see Wegener & Petty, 1995; Wegener et al., in press), or might enhance a bias that exists (if the person thinks that an opposite bias is actually operating; see Wegener & Petty, 1997). Therefore, one of the research questions we addressed in this initial persuasion work regarded the possibility of reversing the usual effects of source characteristics when people attempt to remove the perceived influences—real or imagined—of those aspects of the source.

Our first step was to establish a paradigm in which elicitation of corrections did not also enhance scrutiny of presented attitude-relevant information. If such a dissociation could not be found, this would suggest that correction and scrutiny are not as conceptually distinct as we have hypothesized. Therefore, in our first experiment, we manipulated a characteristic of the source (i.e., likability) and either asked people to correct for the perceived influence of this factor or did not. In addition, as an index of the extent of elaboration given to the content of the presented information, we manipulated the quality of the arguments presented in the message (see Petty & Cacioppo, 1986; Wegener, Downing, Krosnick, & Petty, 1995, for description of this procedure). If our attempts at eliciting corrections change the amount of scrutiny given to the message arguments, we should find a corresponding change in the persuasion difference between strong (compelling) and weak (specious) argument conditions (see Petty, Wells, & Brock, 1976). That is, individuals instructed to correct should show a larger impact of argument quality on attitudes than those not instructed to correct. If corrections can occur without changing the amount of message scrutiny, this would provide some initial evidence that correction and scrutiny can be distinct and would also set the stage for additional studies.

EXPERIMENT 1

METHOD

Participants and Design. Undergraduate students at Ohio State ($N = 120$) participated as a means of partially satisfying an introductory psychology course requirement. They were tested in groups ranging in size from 1 to 10 and were randomly assigned to one of eight conditions comprising the 2 (Source likability: liked or disliked) \times 2 (Argument quality: strong or weak) \times 2 (Correction: instruction or none) between-participants design.

PROCEDURE

Upon entering the laboratory, all participants were told, both verbally and in writing, that the experimenter was working with the Department of Communications to investigate how people evaluate and respond to different styles and modes of communication. Participants were told that they would read transcripts from a radio broadcast that took place on campus the previous year. They were told that the transcripts would include a short interview and a speech from a college official. After reading the speech, they responded to a questionnaire booklet. Following this, they were debriefed, thanked, and dismissed.

Likability Manipulation. Participants were first asked to read an excerpt from an interview with the person whose speech they would evaluate. The interview was one page in length and consisted of a short question-and-answer section (e.g., name, job status), in which it was revealed that the speaker used to work at the University of Michigan—a rival institution. The next set of questions asked the speaker to compare the two schools, and the speaker's responses to these questions were used to manipulate the likability of the source (see Chaiken, 1980). In brief, the likable speaker praised the participants' school over the rival school (e.g., "the students here are more engaged and very concerned with their role in our society, something rarely seen at my other school"), whereas the unlikable source derogated the participants' school in favor of the rival school (e.g., "the students here are less mature than those at my other school"). In order to enhance the salience of the source likability manipulation, all participants were asked to rate their impressions of the source right before completing the key measures of attitudes toward the position advocated in his speech. These source ratings were made on a series of 9-point (+4 to -4) semantic differential scales (e.g., likable/dislikable, friendly/unfriendly).

Argument Quality Manipulation. After reading either the likable or dislikable interview, participants read that the topic of the speech dealt with the implementation of senior comprehensive exams. The speaker indicated that he had prepared a background paper on the policy of requiring seniors, prior to graduation, to pass a series of exams to demonstrate their general competency—as well as the specific skills required by their major area of study. Failure to pass these tests would require remedial work before the degree could be conferred. No mention was made regarding when the policy was recommended to take effect.

Next, participants were given a speech transcript that was approximately 1.5 pages in length. The speech contained either four strong arguments (e.g., starting salary for graduates of institutions with the exams increased by over \$4000) or four weak arguments (e.g., exams improved student motivation by increasing the students' anxiety levels).

These arguments were used by White and Harkins (1994) and adapted from those developed by Petty and Cacioppo (1986). Participants were given ample time to read the speech (4 minutes), and then were asked to complete a questionnaire booklet.

Correction Instruction Manipulation. Just prior to completing the measures of attitudes toward the comprehensive exam policy, all participants were told that, because their own opinions about the exam policy might influence their ratings of the quality of the speech, they would first need to give an indication of their personal opinions on the exam policy (cf., Petty et al., 1976). For the participants in the correction instruction condition, they also were told that "other information not related to the speech or topic may influence your evaluation of the speech....In making the following judgments, please do not let non-speech factors, such as your personal opinion about the speaker influence your ratings." These instructions were reiterated verbally before participants turned to the pages that contained the attitude and speech measures. Participants in the no-instruction condition were not alerted to "non-speech" factors.

Dependent Measures. After completing the source questions and receiving the correction instruction manipulation (or not), all participants completed measures of their attitudes toward the senior comprehensive exam policy. First, they were asked to indicate the extent to which they agreed with the proposal of senior exams on an 11-point scale (1—"do not agree at all" to 11—"agree completely"). Next, participants rated the concept of senior exams on four 9-point semantic differential scales (+4 to -4, good/bad, beneficial/harmful, foolish/wise, and unfavorable/favorable).

Following the attitude items, they completed some ancillary measures (e.g., impressions of the speech—such as its clarity), and finally some questions designed to serve as manipulation checks on the argument quality and source likability manipulations. To check on argument quality, participants were asked, "Were the arguments used in the speech of high quality?" Responses were made on a scale ranging from "not at all" (1) to "very high quality" (11). To check on the source likability manipulation, participants rated, "How likable did you feel the person who made the speech was?" and "Did the person who made the speech seem friendly to you?" on 11-point scales ranging from "not at all likable (friendly)" (1) to "very likable (friendly)" (11).

RESULTS

The data were analyzed in a series of 2 (liked or disliked source) \times 2 (strong or weak arguments) \times 2 (correction instruction or not) analyses of variance (ANOVAs).

Manipulation Checks. An index of source likability was computed by averaging the participants' responses to the two source manipulation check questions ($r = .86$). Analysis revealed only a main effect for source, $F(1, 111) = 28.44, p < .0001$. Participants exposed to the likable source rated the source higher on the index ($M = 7.22$) than participants exposed to the dislikable source ($M = 5.06$; the same results are obtained using the likability measures collected before the attitude measures). The argument quality check revealed a main effect for argument quality, $F(1, 112) = 31.45, p < .0001$. Participants rated the strong arguments ($M = 7.55$) as better in quality than the weak arguments ($M = 5.35$). Also, a smaller but significant main effect was found for source, $F(1, 112) = 5.26, p < .03$, with participants exposed to the likable source rating the arguments ($M = 6.90$) as better than participants exposed to the dislikable source ($M = 6.00$). No other effects emerged.

Attitude Measure. Because the scales were highly correlated (mean $r = .84$), participants' responses to the five attitude measures were combined. The scores were standardized to make the 11-point and 9-point scales comparable, and then they were averaged. First, a main effect for argument quality was found, $F(1, 112) = 13.35, p = .0004$. Participants who read the strong arguments were more in favor of the exam policy ($M = .29$) than participants who read weak arguments ($M = -.29$). This main effect of argument quality was *not* moderated by the presence or absence of a correction instruction ($F < 1$). Of greater interest, a Source likability \times Correction instruction interaction was obtained, $F(1, 112) = 6.88, p < .01$ (see Figure 1). In the absence of the correction instruction, the typical effect of source likability was obtained: People reacted more favorably toward the exam policy when it was presented by a likable source than by a dislikable source ($p < .10$). However, when people were warned of a possible bias, this source effect disappeared and was slightly reversed. The reversal in the pattern was due to the fact that recipients who received the dislikable source and were told to correct were significantly more favorable toward the senior comprehensive exam issue ($M = .23$) than were recipients who received the dislikable source but were not told to correct ($M = -.35$), $p < .05$. No difference was found between participants exposed to the likable source in the no correction versus correction conditions ($M = .18$ and $M = -.07$, respectively), $p > .15$.

DISCUSSION

In Study 1, students received a proposal from a likable or a dislikable source that contained either strong or weak arguments in favor of instituting senior comprehensive exams. When no correction instruction

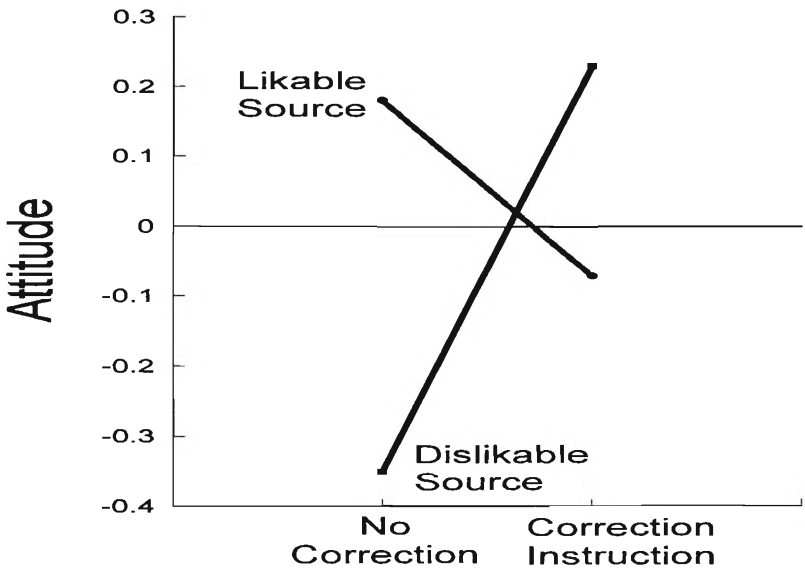


FIGURE 1. Attitudes as a function of liking for source and correction instruction in Experiment 1.

Note. Higher numbers indicate more favorable attitudes.

was given, attitudes toward the proposal were more favorable when the message was presented by a likable rather than dislikable source. However, when a correction instruction was given, attitudes were in the direction of being more favorable when the message was presented by a dislikable rather than likable source. People were especially likely to correct for a dislikable source.³

It is important to note that, in this study, the correction instruction had no impact on the size of the argument quality effect on respondents' attitudes, suggesting that the observed correction was not due to changing the amount of elaboration aimed at processing the substantive arguments contained in the message (Petty et al., 1976). The fact that the same argument quality effect was present regardless of whether a cor-

3. Of course, because there was not a "no source" control group in this research, we cannot tell if the source bias in the no correction conditions is due to an unfavorable bias for the dislikable source, a favorable bias for the likable source, or both. In any case, regardless of the actual bias induced, the FCM holds that people correct for the *perceived or expected* bias. Thus, in this study, the FCM would suggest that participants might have perceived or expected less of an influence of the likable source (perhaps because many of their reactions to the counterattitudinal message were less than favorable), or might have been more motivated to correct for the negatively biasing influence of the dislikable source (see Wegener & Petty, 1997, for additional discussion).

rection occurred or not is consistent with our hypothesis that effort aimed at scrutinizing issue-relevant information is distinct from effort aimed at removal of bias, at least when the correction instruction follows the message.

Although we generally regard theory-based corrections as requiring greater cognitive effort than lack of correction in the same setting—at least until such corrections become well-practiced and routinized (cf. Smith, 1989)—this is not to say that uncorrected outcomes are necessarily based on low levels of cognitive effort. That is, as just noted, effort given to theory-based corrections is conceptually distinct from effort given to the task in general. Recall that the FCM suggests that theory-based corrections occur only if people identify a factor as potentially biasing and are then motivated and able to engage in attempts to remove the perceived influence of that factor. Cognitive effort can often be given to a task when needs for bias correction are not salient and no potential bias is identified.

This perspective reinforces our view that there are multiple routes to diminishing the impact of simple cues in persuasion settings (see Petty, 1994). That is, the impact of simple cues could be negligible because high levels of scrutiny of attitude-relevant information overwhelm the cue (Chaiken et al., 1989), because the cue is treated as an argument and is dismissed (Petty & Cacioppo, 1986), or because of explicit corrective efforts to remove a perceived bias associated with the cue (Petty, 1994; Wegener, 1994). Of course, the theory-based correction view also raises the interesting possibility that effects of cues could be reversed under conditions that encourage corrections. As noted previously, studies guided by the ELM (Petty & Cacioppo, 1986) and the HSM (Chaiken et al., 1989) have generally found decreasing impact of simple cues as elaboration of attitude-relevant information increases. The fact that studies guided by these frameworks have never reported *reversals* of the usual impact of cues suggests that high levels of scrutiny (such as that induced by high personal relevance; Petty & Cacioppo, 1979b), might not typically induce efforts at correction for perceived bias associated with the cues (although corrections could have been responsible for attenuation of cue effects if the message recipients' theories of bias associated with the cues were reasonably accurate).

In Study 2, we examined correction processes under conditions in which people were expected to be engaging in considerable effort in scrutinizing a persuasive message, as well as conditions under which scrutiny of persuasive messages was expected to be rather minimal. In this study, all participants received a message containing strong arguments presented by either a likable or dislikable source. As in Study 1, just prior to completing the attitude measures, participants either were or were not warned that they should not be influenced by any biasing

characteristics of the source. In the no-correction conditions, we expected to obtain a data pattern consistent with past studies guided by the ELM and HSM. That is, source likability should have a greater impact under low elaboration conditions rather than high elaboration conditions (e.g., Chaiken, 1980; Petty et al., 1983). When low elaboration participants are given a correction instruction, we expect them to correct for the biasing impact of the source such that the source effect should be attenuated—replicating Study 1.

If the source effect is eliminated under high elaboration conditions (as in previous studies guided by the ELM and HSM), we can examine if the observed elimination of the source factor here, and in prior studies, is likely due to correction processes or to other factors. If high levels of scrutiny involve explicit attempts to remove the impact of cues, then the correction instruction should have little further effect in the high elaboration conditions. If, however, message recipients did not consider the biasing nature of the cue while effortfully processing the message arguments, then a correction instruction might have just as much impact as in the low-processing/correction-instruction condition. If people attempt to remove a perceived bias (source likability) that is not really present under high elaboration conditions, then instructions to correct might actually lead the disliked communicator to be more persuasive than the likable communicator.

EXPERIMENT 2

METHOD

Participants and Design. Undergraduate students at Ohio State ($N = 56$) participated as a means of partially satisfying an introductory psychology course requirement. They were tested in groups ranging in size from 1 to 11 and were randomly assigned to 1 of 8 conditions comprising a 2 (Source likability: liked or disliked) \times 2 (Elaboration: high or low) \times 2 (Correction: instruction or none) between-participants design.⁴

PROCEDURE

4. The data for this study were collected over a four-week period. About midway through the planned experiment, the University of Michigan football team beat a previously undefeated Ohio State team in the final regular season game of the year. This defeat marked the second year in a row in which Michigan had beaten a previously undefeated Ohio State team, virtually eliminating Ohio State's chance at a national championship. Because this very salient event seemed likely to contaminate the results of the study (given that the message source was associated with the U of M), the sessions conducted after the defeat were excluded and analyzed separately (see Footnotes 5 and 6).

The procedure was basically the same as in Study 1. Again, upon entering the laboratory, all participants read that the experiment concerned reactions to different modes of communication. As in Study 1, participants learned that they would read transcripts from a radio broadcast that took place on campus the previous year, and that after reading the transcript they would answer some questions. At the end of the study, they were debriefed, thanked, and dismissed.

Elaboration Manipulation. Two factors were varied in order to strongly manipulate the elaboration likelihood—issue relevance (Petty & Cacioppo, 1979b; see Petty, Cacioppo, & Haugtvedt, 1992) and cognitive load (Gilbert & Osborne, 1989; Gilbert, Pelham, & Krull, 1988). First, in the low elaboration likelihood conditions, participants were told in the transcript that the senior comprehensive exam proposal was being considered for implementation for 10 years in the future. Thus, it was highly unlikely that any of the participants would be affected by the proposal. In addition, low elaboration participants were asked to memorize a 7-digit code number (i.e., 7985341) that appeared on their transcript booklet so that they could reproduce it on the questionnaire booklet that would be distributed shortly. In the high elaboration condition, participants were told in the transcript that the exam proposal was being considered for implementation next year, and thus it was likely that virtually all of the participants would be affected. The high elaboration participants were asked to remember only a one-digit session number (i.e., 5). Thus, the elaboration manipulation used a combination of motivational and ability factors to instantiate two levels of elaboration likelihood.

Likability Manipulation and Persuasive Message. The likability manipulation was identical to that used in Study 1. That is, participants read an excerpt from an interview with the speaker who either praised Ohio State students relative to those at the University of Michigan (likable source) or disparaged them (dislikable source). In this study, all participants read the strong arguments used in Study 1.

Correction Instruction Manipulation. As in Study 1, just prior to the attitude measures, all participants were told that because their own opinions about the exam policy might influence their ratings of the quality of the speech, they would first need to give an indication of their personal opinions on the issue. Participants in the correction instruction condition also read that: "For purposes of validity...it is important that you are careful not to let your personal feelings toward the speaker influence your judgment of the issue. Please judge the issue on its merits only without letting any biasing factors enter in."

Dependent Measures. The first measure in the questionnaire booklet

asked participants to rate their opinions on "instituting senior comprehensive exams at Ohio State University." All participants rated the concept of senior exams on four, 9-point semantic differential scales (+4 to -4, good/bad, beneficial/harmful, foolish/wise, and unfavorable/favorable). Because only 15 minutes could be allocated to the study, students completed only one additional item (intended as a check of the correction instruction) following the attitude measure. They were asked to rate the extent to which they tried to ignore their personal reactions to the speaker while judging his speech on a scale ranging from not at all (1) to very much (11).

RESULTS

Ancillary Measure. A 2 (Source likability: liked or disliked) \times 2 (Elaboration: high or low) \times 2 (Correction: instruction or none) ANOVA on the measure of the extent to which participants tried to ignore their personal reactions to the speaker revealed only a main effect for the correction instruction. Although even students who were not prompted to ignore their reactions to the speaker reported that they tried to do so ($M = 6.9$), this was even more true of students instructed to be unbiased ($M = 8.2$), $p < .05$. The lack of an effect of elaboration likelihood on this measure suggests that high levels of processing do not necessarily prompt people to try to remove any influence of their reactions to a source's characteristics (though such removal could be outside of conscious awareness).⁵

Attitude Measure. To calculate the attitude score, participants' responses to the four semantic differential items were summed. Of greatest interest, a Source likability \times Correction instruction interaction was obtained, $F(1, 48) = 6.23$, $p < .02$, that was not further moderated by elaboration condition (i.e., three-way interaction $p > .6$; see Figure 2 for means for all cells). That is, under both high and low elaboration conditions, students engaged in similar corrections. When instructed to be unbiased in the presence of a dislikable source, people became more favorable toward the exam issue ($M = 11.64$) than when not told to be unbiased ($M = 7.21$), $p < .05$. When instructed to be unbiased in the presence of a likable source, judgements were somewhat less

5. The students who participated in the experiment following the Ohio State defeat by Michigan reported that they did not try to ignore their personal reactions, regardless of whether they were prompted ($M = 5.1$) or not ($M = 4.8$). In fact, students participating after the Ohio State defeat were significantly less likely to report trying to ignore their personal reactions to the speaker ($M = 4.9$) than were students participating prior to the Ohio State defeat ($M = 7.5$), $p < .001$.

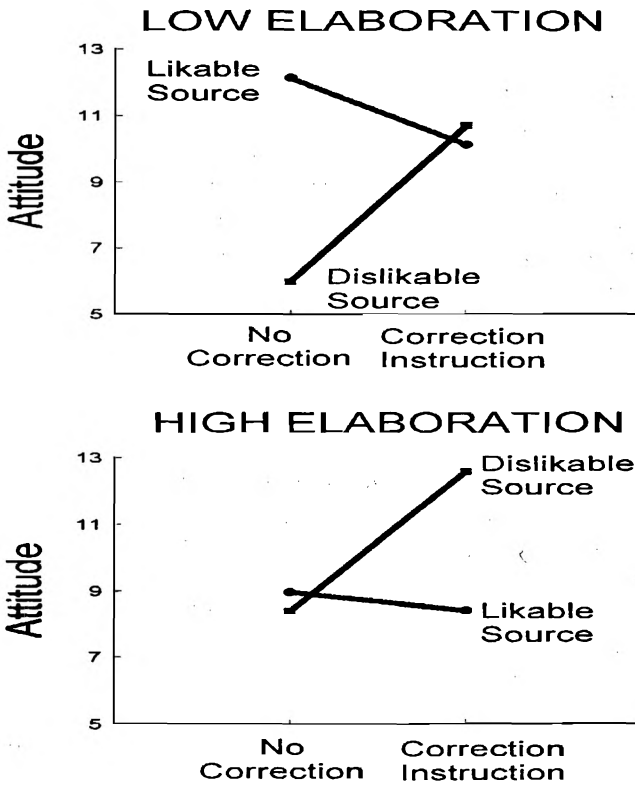


FIGURE 2. Attitudes as a function elaboration condition, liking for source, and correction instruction in Experiment 2.

Note. Higher numbers indicate more favorable attitudes.

favorable ($M = 9.29$) than when not told to be unbiased ($M = 10.57$), n.s.

One might wonder whether the correction manipulation had a similar effect in the high and low elaboration conditions because of a failed elaboration manipulation. Some evidence that the elaboration manipulation was successful, however, comes from the fact that when considering only the conditions in which no correction instruction was given (i.e., the conditions that most closely replicate prior persuasion research), a marginal two-way interaction is obtained such that source likability has a larger impact on attitudes under low elaboration (M likable source = 12.14; M dislikable source = 6.00) than under high elaboration conditions (M likable source = 9.00; M dislikable source = 8.43), $F(1, 24) = 2.96$, $p < .09$ (see Figure 2). This is what would be expected if under high elaboration conditions, processing the argu-

ments overwhelms the source likability information, or the source is evaluated as an argument and is discounted.⁶

DISCUSSION

In Study 2, students who received a persuasive message under low elaboration conditions with no correction instruction were more persuaded by a likable than a dislikable source. Providing a correction instruction, however, eliminated the typical source effect. Similarly, consistent with prior research, making the issue high in relevance also eliminated the source effect (see Figure 2). Based on this evidence alone, it might have been concluded that high elaboration processing leads people to explicitly correct for biasing factors such as source likability. If high relevance led to a correction, however, then explicitly instructing students to correct should have little additional impact on judgments. Yet, when people who had initially processed the message at high levels received a correction instruction, a correction still occurred. As a result of correcting when no bias was present, the impact of the source likability manipulation was reversed—the dislikable source was more persuasive than the likable source. Thus, it appears that enhanced message processing per se does not imply correction, and that corrections can occur regardless of the effort initially put into a judgment task. The fact that corrections occurred even when there was no impact of the cue before correction (i.e., in the high-elaboration conditions), is consistent with previous work suggesting that corrections are aimed at removing the perceived effect of the biasing factor rather than the actual bias that occurs (e.g., Wegener & Petty, 1995; Wegener et al., in press).

6. The attitude results for students who participated following the Ohio State defeat were dramatically different. For these students, only a marginal Elaboration \times Source likability interaction emerged ($p < .07$), indicating that the source likability manipulation had a larger impact under high relevance conditions than under low relevance conditions. We suspect that the intense disliking of the source for these students motivated effortful counterarguing under the high elaboration conditions and the effect of this counterarguing was greater than the cue impact of likability (see Petty, 1994; Petty & Wegener, in press). Prior research has shown that motivation to counterargue can lead to a significant reduction in the persuasiveness of a message under high elaboration conditions, even if the message contains strong arguments (see Petty & Cacioppo, 1979a). The correction instruction had no impact on these students, presumably because they reported that they were no more likely to try to ignore the source when asked to correct than when not asked. Thus, when negative feelings toward a source are very strong and salient (and perhaps perceived as justified), people may not correct their judgments even when explicitly instructed to do so.

GENERAL DISCUSSION

The psychological study of attitude change has provided considerable insight into many processes by which persuasion can occur. For example, according to the ELM (Petty & Cacioppo, 1986), characteristics of sources (such as their perceived expertise, likability, or attractiveness) can influence persuasion by acting as simple cues to message validity, by influencing the amount or nature of scrutiny of attitude-relevant information, or, in some circumstances, by acting as attitude-relevant arguments (for recent reviews see Chaiken, Wood, & Eagly, 1996; Petty & Wegener, 1998). The current research deals with the issue of what happens when recipients of persuasive messages become aware (or believe they have become aware) of some possible biasing effect of a persuasion variable (e.g., "the mere number of arguments made me more favorable than I ordinarily would have been") or some process by which the variable has had an effect (e.g., "I often use the rule of thumb that 'the more arguments, the more valid the conclusion is' when I'm not sure what to believe").

In some circumstances, existing theories of attitude change suggest that increased salience of a given persuasion variable, such as source likability, might increase the impact of the process by which the variable has an effect. Thus, making the mere number of arguments salient (e.g., by numbering each argument in a message), or making the attractiveness of the source of a message more salient (e.g., by including a large color picture rather than a small black and white one), might increase the likelihood that a number or attractiveness heuristic would have an impact on attitude change. In fact, within the HSM, Eagly and Chaiken (1993) have explicitly argued for a such an effect. According to the HSM, stored heuristics influence persuasion only to the extent that they are available and accessible in memory, and "factors that affect the accessibility of heuristics should exert a corresponding effect on the judgmental impact of heuristic cues" (p. 330). That is, heuristics should have a greater impact on attitudes to the extent that the heuristics come easily to mind when the message recipient encounters a persuasive appeal. Also, this model posits that, *even under high elaboration conditions*, as long as the invoked heuristic does not contradict the other information presented, the heuristic should add to the impact of the other information (Maheswaran & Chaiken, 1991). Thus, this position would generally suggest that increases in salience of a persuasion cue (as long as the cue is associated with a stored heuristic) should lead to corresponding increases in the judgmental impact of the cue. This position has received some empirical support (e.g., see Pallak, 1983), and seems especially useful for contexts in which multiple relevant heuristics might be hypothesized to exist.

In the ELM, the salience of any given variable might have different effects, depending on the likelihood of elaboration. That is, when the likelihood of thinking is low, increased salience of a source characteristic would likely increase its "peripheral" impact compared to other potential cues (e.g., making an "attractiveness heuristic" more likely than a "number heuristic" to guide judgments). Under high elaboration conditions, however, increased salience of an attractive source would likely increase the scrutiny it received as a message argument (i.e., as a piece of information relevant to determining the validity of the position espoused). If under scrutiny, the attractiveness of the source was deemed relevant to validity, its impact would be increased (and added to that of the other relevant information); but if under scrutiny, the attractiveness of the source was deemed irrelevant or not cogent, its impact would be decreased (see Petty & Wegener, *in press*). Increasing the salience of a source characteristic could also increase its biasing effect on information processing, but only to the extent that people were unaware that the variable was producing an unwanted bias. The fact that variables can serve in different roles under high and low elaboration conditions has received empirical support (Miniard et al., 1991; Petty & Cacioppo, 1984a, 1984b), although the impact of increasing the salience of the variable has not been addressed.

The current research examines what happens when a factor in the persuasion setting—a likable or dislikable source in this instance—becomes salient as a possible source of bias. Although correction for bias was not addressed in previous discussions of cue salience (such as Eagly & Chaiken, 1993), we believed that when salient cues are also considered as potentially biasing, a very different type of effect (rather than enhanced impact of the cue or heuristic) could occur. In our Experiment 2, people engaged in correction for a presumed bias, regardless of whether the amount of initial elaboration in which they engaged was high or low. The instructed correction for the biasing impact of a source factor has not previously been reported in the persuasion literature, and in this case led a source factor to have the opposite effect that it normally does (when people corrected for an expected impact that did not exist—in high elaboration conditions). This research suggests that if certain issue-irrelevant variables in the persuasion setting (e.g., attractive sources, pleasant moods) are made salient, they might not invariably have greater impact on attitudes via the heuristic or peripheral routes, or by biasing processing of the issue-relevant information (as both the ELM and HSM predict)—or might not simply be discounted when processed as an argument as the ELM anticipates; but they might actually have reversed impact based on people's attempts to correct for the perceived bias that the variable

has produced.⁷ Also, in some circumstances, communication norms and other factors in the persuasion setting might also make some decision rules seem less than legitimate, even though the decision rule itself might have formed because of some perceived validity of the rule. If so, people might attempt to remove the influence of the variable or heuristic (Petty, 1994; Petty et al., 1994; Wegener, 1994).

The research reported here has focused on corrections for perceived biases that resulted from a characteristic of the message source. Of course, other biases can also be perceived in persuasion settings. For example, if people perceive that an environmental factor in the persuasion setting—such as an annoying noise—is affecting their reactions to the persuasive appeal (Nisbett & Wilson, 1977), they might attempt to correct assessments of the target based on their perceptions of the biasing effect of the environmental factor. Note that in this case, environmental noise is unlikely to be incorporated into a decision rule regarding validity of the message. That is, there is no decision rule that people should believe, or disbelieve, messages accompanied by noise. Rather, the person might generate a hypothesis (or theory) at the moment to address the effects of the noise. In one study, Wegener, Edwards, Petty, and Weary (1996, raw data) played an audiotape of a persuasive message on which static made reception of the message difficult. After the message, all recipients received a correction instruction and were asked to provide their perceptions of the speaker and of how persuasive and convincing the message had been. The primary finding was that theories of bias associated with how white noise would affect perceptions of speakers and messages (which had been assessed during a “separate study” earlier in the session) predicted respondents’ ratings of the speaker and message. To the extent that people believed that white noise would make people react negatively to a message or a speaker, ratings of the message and of the speaker were more favorable.

Thus, although biases based on characteristics of the message source most likely serve as the most salient origin of bias in many settings, many other features of the persuasion context can also provoke correction for bias. For this to occur, people generally need to become aware of the

7. Although the ELM accommodates reversed effects of variables serving as peripheral cues (e.g., if people scrutinize them and determine that they should compensate for their effect), the ELM does not specify the mechanism by which this adjustment would take place (such as the correction based on a naive theory postulated by the FCM). The ELM could also accommodate reversed effects of cues if, in another circumstance, the same variable were to increase the amount of scrutiny given to message arguments (e.g., if an expert source were to increase the processing of weak arguments, this would decrease persuasion). However, this mechanism also does not account for the correction effects hypothesized by the FCM.

potential bias and be motivated and able to correct for it (although as noted previously, repetition of the same type of theory-based correction might make the correction process more automatic over time, cf. Smith, 1989). Given that such corrections can produce opposite biases in judgment, the conditions under which people attempt to correct their judgments, and the determinants of the theories they hold about the direction and magnitude of persuasion biases, warrant additional investigation (cf., Friestad & Wright, 1994; Trafimow & Davis, 1993).

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