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Changing prejudiced attitudes by thinking about persuasive messages: implications for resistance

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Abstract

This research showed that changing attitudes toward stigmatized groups can result from both the simple processes that require little thinking and the traditional elaborative forms of persuasion that require high thinking processes. Importantly, even when the obtained attitude change was equivalent for situations in which there was high and low message elaboration, the changes produced in high thinking conditions were found to be more resistant to further attacks than equivalent changes produced by less thoughtful mechanisms. Not only were those attitudes more resistant as measured objectively (Study 1) but participants also perceived their attitudes to be subjectively more resistant (Study 2). These studies suggest that examining the processes by which prejudice is changed can be important for understanding the consequences and long-term implications of treatments and campaigns oriented to changing attitudes toward stigmatized groups.

Attitudes refer to general evaluations people have regarding other people, places, objects, and issues (Eagly & Chaiken, 1993; Petty & Cacioppo, 1986). Groups of people (e.g., Afro-Americans) can be understood as attitude objects that can influence thoughts and actions. As is the case with any other attitude object, one's overall evaluation of the group (e.g., prejudice) can influence behavior toward members of that group (e.g., discrimination; see Dovidio, 2001). The current research examines the importance of considering the basic processes by which a reduction in prejudice toward stigmatized groups occurs. In particular, we examine the implications of reducing prejudice through processes that require extensive or little amounts of thinking.

Prejudice reduction: low-elaboration processes

In accord with the idea that contemporary prejudice is quite subtle (e.g., it can be held and expressed in unconscious ways; Devine, 1989; Dovidio & Gaertner, 2004; Pettigrew & Meertens, 1995), some scholars have considered that the best strategies for fighting against prejudice must also rely on little thinking. For example, the contact hypothesis (Allport, 1954), one of the most well-known strategies for reducing intergroup conflict, is proposed to involve processes requiring little or minimum information processing, such as *mere exposure* (Pettigrew & Tropp, 2006) and *classical conditioning* (Dovidio, Gaertner, & Kawakami, 2003). Indeed, two of the most primitive and effective means of changing attitudes involve mere repetition of the attitude object (mere exposure; Zajonc, 1968) and associating it with stimuli that already have a valence (conditioning; e.g., Kawakami, Phills, Steele, & Dovidio, 2007).

Attitudes toward stigmatized groups can be changed through other processes that also require relatively little deliberative thinking. Some inference-based approaches, such as *self-perception* theory (Bem, 1965), illustrate this possibility by demonstrating that people sometimes infer their attitudes directly, and perhaps even automatically, in a manner similar to that by which they infer the attitudes and traits of others (i.e., from observed behavior and the context in which it occurred; Uleman, 1987). Thus, a White person who spends time with a Black person (e.g., sharing some activities in a contact-oriented experience) might conclude that "if we do things together, I must like this person."

Furthermore, consistent with the idea that attitude change toward stigmatized groups can occur when deliberative thinking is low, a number of simple *heuristics* can be relevant for reducing prejudice (Chaiken, 1980). For example, low

perceived consensus about one's prejudices can decrease prejudiced responses toward Blacks (e.g., Festinger, 1954; Sechrist & Stangor, 2001). For example, people might use the heuristic: "if most other people do not seem prejudiced, it must be wrong."

In sum, attitude change toward stigmatized groups can occur through several processes that require relatively little deliberative thinking. The articulated mechanisms provide plausible low effort processes by which prejudice reduction strategies (e.g., mere contact) might be effective in reducing prejudiced attitudes.

Prejudice reduction: high-elaboration processes

As just noted, the accumulated work on prejudice reduction has suggested that a variety of low deliberation processes can produce attitude change toward stigmatized groups. Many contemporary theories of prejudice presumably focused on these subtle processes of change because modern prejudice itself was thought to be subtle and covert (e.g., Dovidio, 2001). However, low effort processes are not the only means of attitude change. According to a variety of theories of persuasion, attitude change can also be produced by deliberative processes. For example, one of the earliest deliberative theories argued that message learning was an important precursor of opinion change (Hovland, Janis, & Kelley, 1953). According to this framework, and based on the assumption that ignorance promotes prejudice (Stephan & Stephan, 1984), Pettigrew (1998) proposed that "learning about others" is a critical step in how intergroup contact improves intergroup relations (Allport, 1954). In accord with this view, there are numerous examples of how prejudice is reduced by attending at diversity group seminars and learning new information about other social groups (Fisher, 1968; Rudman, Ashmore, & Gary, 2001).

One of the most influential deliberative theories of persuasion, cognitive response theory (Greenwald, 1968; Petty, Ostrom, & Brock, 1981), similarly postulated a relatively "thoughtful" mechanism underlying attitude change. This theory expanded on the learning approach and contended that persuasion depended not on learning externally presented information *per se*, but on the extent to which individuals generated, articulated, and rehearsed their own idiosyncratic thoughts about the information presented. Consistent with this framework, the self-generation of counter-stereotypical images and thoughts has proven to be an effective method of prejudice reduction (e.g., Blair, Ma, & Lenton, 2001).

In addition to these approaches, many other classic theories of persuasion proposed relatively deliberative mechanisms to account for changes in attitudes toward stigmatized groups. For example, according to dissonance theory (Festinger, 1957), attitudes can change due to effortful cognitive reorganization stemming from the psychological tension induced by engaging in a discrepant action (e.g., Gray & Ashmore, 1975; Hing, Li, & Zanna, 2002; Leippe & Eisenstadt, 1994). For example, interacting with a person toward whom one feels prejudice can lead to a change if people justify their actions by generating reasons for it (e.g., "this person must have some merit if I am interacting with him"). Early research on role-playing also showed that active generation of a message, which involves an effortful process of biased scanning (i.e., search for arguments exclusively in one direction; Janis, 1968), can be a successful strategy for producing changes in the attitudes that people report toward stigmatized groups (e.g., see McGregor, 1993).

Taken together, these studies suggest that in addition to relatively low-elaboration mechanisms, high-elaboration processes such as the self-generation of counter-stereotypical thoughts or dissonance processes are also capable of producing changes in prejudiced attitudes.

Prejudice reduction: multiple processes

The accumulated research on prejudice strongly suggests that attitudes toward stigmatized groups can be modified by both low and high deliberative thinking processes. To the best of our knowledge, however, the vast literature on prejudice has not examined whether the mechanism of prejudice reduction matters, or if all that is important is that a reduction in prejudice occurs, regardless of mechanism. Contemporary dual process models of persuasion, such as the elaboration likelihood model (ELM; Petty & Cacioppo, 1986) and the heuristic systematic model (HSM; Chaiken, Liberman, & Eagly, 1989), were proposed to organize the low and high thought processes of social influence under a common conceptual framework and to establish the conditions under which each kind of process would affect attitude change.

Of particular importance for the current research, these theories also noted that although equivalent degrees of attitude change can occur when deliberative thinking is high or low, the consequences of the attitude change induced are different in each situation. Thus, the ELM holds that the process by which an attitude is formed or changed is consequential for the *strength* of the attitude (see Petty & Krosnick, 1995). Specifically, in a classic persuasion paradigm, when a treatment influences attitudes through low-elaboration processes (e.g., use of a variable as a peripheral cue), the attitudes formed tend to be less persistent, resistant to change, and predictive of subsequent behaviors than when the same intervention produces the same amount of change through a high-elaboration process (e.g., biasing the thoughts generated; Petty, Haugtvedt, & Smith, 1995). Thus, identifying the processes by which particular interventions reduce prejudice can be informative about the immediate and long-term consequences of the intervention.

For example, in a consumer persuasion context, Haugtvedt and Strathman (1990) presented participants with an advertisement for a bicycle that contained strong arguments and positive cues. Before reading the message, participants were informed that the bike would soon be available in their local areas (high personal relevance) or only in a distant market (low relevance). High (as opposed to low) personal relevance has been shown to increase processing of message arguments during message exposure and decrease reliance on peripheral cues (Petty, Cacioppo, & Haugtvedt, 1992). Participants reported their attitudes about the product just after exposure to the ad, and again 2 days later. Compared to participants in a control group, both high and low relevance (elaboration) participants showed more favorable attitudes toward the product on the first measure. That is, participants changed their attitudes (showing equivalent initial attitude change) in response to the ad regardless of the amount of thinking devoted to the message. Most importantly for the issue in question here, the results showed that the attitude change measured 2 days later was stable only for participants in the high (but not low) relevance conditions. What remains to be examined is whether elaboration is also associated with different consequences in the domain of prejudiced attitudes. Although attitudes toward a new bicycle showed the predicted effects, it is not clear if similar effects would be obtained when established prejudiced attitudes are modified.

Thus, the goal of the present research is to examine the role of elaboration in producing resistant changes in prejudiced attitudes toward stigmatized groups. Surprisingly, to our knowledge, direct comparisons between thoughtful and non-thoughtful approaches to reducing prejudice have not been made. One relevant study, however, was reported by Wegener, Clark, and Petty (2006). In a series of experiments, it was shown that group stereotypes can influence judgments about individual people in both thoughtful and non-thoughtful ways. Although all the participants in these studies relied upon stereotypes in making explicit judgments about target individuals, and the judgments appeared to be the same (i.e., they were equally extreme) across high- and low-elaboration conditions, the consequences of these stereotype-based judgments differed depending on the amount of processing of the target information presented. For example, judgments about the target individual that were based on thoughtful use of the stereotype were less likely to change in reaction to a challenge than were judgments based on less thoughtful use of the stereotype (i.e., using the stereotype as a simple cue). Although this research clearly shows that the impact of stereotypes on judgments of novel individuals under high and low thinking conditions can vary as a function of how thoughtful the stereotype was, it does not address whether changes in group level attitudes are differentially consequential depending on how those changes were produced (see also Maio, Haddock, Watt, & Hewstone, 2009, for other relevant research on persuasion and prejudice).

In short, what remains unaddressed in the literature on prejudice is whether it matters for subsequent resistance to change whether prejudice reduction is brought about by relatively high versus low thought processes. In fact, one might argue that prejudiced attitudes are different from the other types of attitudes examined in a number of ways. First, the attitudes examined in prior research focused on novel targets about which people did not have prior attitudes. In the domain of prejudice, people already have relevant information and thus the mechanism of change might not matter as much.

Second, prejudiced attitudes apply to a whole category of people whereas prior research on attitude strength has examined attitudes toward particular targets (e.g., ranging from one particular person to one specific product or proposal). It might not be the same to evaluate a consumer product, or a persuasive proposal, or even a particular individual, than a whole stigmatized group. Among other things, this is important because attitudes toward categories might be consequential (e.g., resistant and stable) even when changed through low-elaboration processes. Alternatively, because categories apply to many different things, it might be particularly difficult to make them strong. If that is the case, it would be inconsequential whether they were changed through high- or low-elaboration processes.

Third, it might be that low deliberative thinking mechanisms based on simple affective processes (e.g., classical conditioning, mere exposure) might produce stronger attitudes than high deliberative thinking processes when it comes to prejudiced attitudes. This is because the attitudes examined in prior research tended to be cognitive in nature whereas prejudiced attitudes toward groups were often based on affect or emotion as much as or more than on cognition (e.g., Harris & Fiske, 2006; Smith & Mackie, 2005). Given that, extensive cognitive processing of a relatively rational message might not be enough to produce any structural change in the attitude that would give it sufficient strength to persist, resist, and guide behavior. Persuasion research on attitudes based on affect versus cognition has shown that messages that match the underlying basis of the attitude tend to be more effective than messages that mismatch (e.g., Fabrigar & Petty, 1999; Haddock, Maio, Arnold, & Huskinson, 2008). Thus, processing a rational persuasive message might be relatively ineffective in producing consequential attitude change for prejudiced individuals.

Finally, examining the role of elaboration in changing prejudiced attitudes can be important for a number of practical purposes, including the implications for designing more effective interventions capable of producing sustained changes. In sum, our key research question concerns the

extent to which persuasive messages can change attitudes toward stigmatized groups to a similar extent under high and low deliberative thinking conditions, and if so, to examine whether the underlying processes of change are relevant for the consequences associated with that persuasive impact.

Overview

Previous research in the domain of attitude change has consistently shown that extensive processing and elaboration of information increases attitude strength (Petty et al., 1995). Although there is now considerable agreement that thoughtful and relatively non-thoughtful attitude change processes can affect prejudice, it is less clear whether the changes in prejudice produced by deliberative processes also result in more resistant attitudes than changes produced by less thoughtful processes. If so, this finding would point to the potential importance of understanding the mechanisms by which a reduction in prejudice is achieved.

To examine this issue more directly, we conducted two studies to test whether reducing prejudice in a thoughtful way would make the new attitude more resistant to subsequent attack than producing the same reduction in prejudice by less thoughtful means. In two experiments, participants received a persuasive message composed of compelling arguments and positive cues in favor of South American immigrants in Spain. An attitude toward a stigmatized or minority group (e.g., South American immigrants in Spain) is considered prejudiced when it is less favorable than the attitude toward another non-stigmatized or majority group (e.g., Spaniards in Spain). The extent to which participants were motivated and able to think about these messages was manipulated or measured. Across experiments, we assessed not only whether extensive message processing can reduce prejudice, but also the extent to which it has consequences for resistance compared to lower processing of the same messages. Specifically, we hypothesized that even though the prejudiced attitudes of high- and low-elaboration individuals could both change to the same extent following a persuasive communication, these attitudes would differ in their subsequent objective (Study 1) and subjective (Study 2) resistance to change.

Study 1: objective resistance

Our first study was designed to examine the effects of deliberative thinking about persuasive messages in reducing prejudice toward a stigmatized group. Furthermore, this study examined the effects of thinking on attitudinal resistance. Attitudinal resistance refers to the ability of an attitude to maintain itself in the face of an attack, and is used as an objective indicator of attitude strength (see Petty & Cacioppo, 1986; Petty & Krosnick, 1995). In this study, resistance was assessed objectively by exposing participants to a second counter-attitudinal message and measuring the resulting attitudes. This method of assessing resistance is important because processes of change based on low amounts of deliberative thinking (such as classical conditioning and mere exposure) can sometimes create attitudes with relative stability (through multiple repetitions and exposures). However, processes based on low (vs. high) thinking are less likely to create attitudes able to resist a compelling attack. For example, pairing an attitude object with positive stimuli 20 times would result in a more accessible and stable attitude than pairing those stimuli just one or two times (e.g., Fazio, 1995). These evaluations would also be relatively resistant to extinction in the absence of compelling challenges. However, because these attitudes are based only on mere association rather than substantive information, they are not likely to be resistant when challenged with cogent evidence.

In contrast, attitudes that changed as a result of carefully considering strong arguments are more likely to resist change when attacked. This is because elaboration typically involves accessing relevant information from both external and internal sources, making inferences, generating new arguments, and drawing new conclusions about the merits of the attitude object (Petty & Cacioppo, 1986). The mental activities characterizing elaboration involve people adding something of their own to the information available and are likely to lead to the integration of all relevant information into the underlying structure for the attitude object, therefore making the adopted evaluation not only stable but also coherent and resistant (see Petty et al., 1995, for a review). Thus, people who possess accessible attitudes bolstered by considerable attitude-congruent knowledge are better able to defend their attitudes compared to those who have equally accessible and extreme attitudes that resulted from low-elaboration processes. In this study, we measured extent of thinking by asking participants about their cognitive efforts during the experiment.

The general prediction was that individuals whose attitudes are changed via high thinking processes would naturally resist the influence of an attack because they would be able to marshal their own initial cognitive responses to defend their viewpoints. When attitudes are formed or changed via low thinking processes such as by relying on simple cues (e.g., there were many arguments in favor of the issue), people would be relatively less able to marshal a defense of their opinions (e.g., Haugtvedt & Petty, 1992). Thus, our hypothesis was that the attitude change of high-elaboration participants following an initial message would be comparable to that of low-elaboration participants. However, we expected that the new attitudes of high-elaboration participants would prove more resistant to the effect of attacking information than the new attitudes of low-elaboration participants.

Method

Participants and design

Seventy-three undergraduates (51 women and 22 men) (mean age: 19.80; $SD = 1.33$; White Europeans) from the Universidad Complutense de Madrid participated in a 2 (pro-immigration message vs. control) × 2 Extent of elaboration (continuous variable) design. Participants were randomly assigned to the manipulated variable (message) and reported the extent of thinking in the measured variable (elaboration). None of the participants was South American. After the first message about immigrants or the control message, all participants received a message inconsistent with the pro-immigration advocacy. The key dependent measure of resistance was change in attitudes from Time 1 (after the initial message) to Time 2 (after the attacking message).

Procedure

First, participants read a persuasive message in favor of South American immigrants or a race-irrelevant message. The control topic concerned the benefits of eating vegetables. After reading the pro-immigration or the control message, all participants were asked to complete a questionnaire designed to assess their attitudes regarding South American immigrants. After completing the questionnaire, they were presented with a message in the form of a newspaper article about Latin gangs, in which several crimes committed by South American immigrants were mentioned. Finally, participants' attitudes toward South American immigrants were assessed a second time using another paper questionnaire.

Independent variables

Persuasive message

Participants were randomly assigned to the persuasive pro-immigration message condition or to the control message condition. In the pro-immigration message condition, participants were asked to read a positive persuasive message about South American immigrants. The persuasive message was constructed to contain both strong arguments and positive peripheral cues, so that both high- and low-elaboration individuals' attitudes could change. The message in favor of South American immigrants contained seven strong arguments about the benefits of receiving immigrants. The arguments selected were pretested and shown to produce mostly favorable thoughts when people were instructed to think about the messages. The gist of one of the strong arguments was that South American immigrants help stimulate the national economy because of their crucial role in the industrial infrastructure. In addition to a large number of compelling arguments, the presence of which could serve as a positive cue (Petty & Cacioppo, 1984), the message also contained other information that could serve as positive cues for identifying the direction and credibility of the proposal. For example, the information was claimed to be taken from prestigious sources with high credibility (e.g., *Wall Street Journal*, prestigious sociologists). The positive direction of the message was also evident from the title of the message (*The Benefits of Immigration*), which could work as an important cue for participants to be able to infer the position advocated even without thinking about the merits of the arguments.

In the control message condition, participants read an immigrant-irrelevant, positive message about the benefits of including vegetables in one's diet. A condition with a control message was included in the design in order to have equivalent tasks across conditions and to keep a similar time sequence in all conditions. Furthermore, without a control message, it would be difficult to determinate whether potential changes in attitudes are due to the persuasive treatment *per se* or to other factors that might operate during the time that the treatment occurred.

Extent of elaboration

Elaboration was assessed using two questions about perceived cognitive effort. Participants rated the extent of their thinking about the message on two 9-point semantic differential scales anchored as follows: low elaboration versus high elaboration, and low attention paid versus high attention paid. The two measures were significantly correlated ($r = .57$, $p < .001$) and were averaged to form one measure of elaboration. Although this might not be a perfectly reliable measure of subjective amount of thinking, previous research has shown that such self-reports can be effective in discriminating participants who had engaged in relatively high and low thinking in particular contexts (e.g., Petty, Briñol, & Tormala, 2002). Scores on this elaboration measure were not affected by the message manipulation, Fs < 1, and were uncorrelated to prejudiced attitudes following the initial message ($r = .028$; $p = .81$).

Dependent measures

Prejudiced attitudes following the initial message

Participants' attitudes toward immigrants were assessed by averaging the responses to five highly related ($\alpha = .82$) 9-point scales (i.e., unappealing vs. appealing, unpleasant vs. pleasant, not recommendable vs. recommendable, unlikeable vs. likeable, I do not like them vs. I do like them). It is important to note that, although in Spain, attitudes toward South American immigrants tend to be positive in

absolute terms (e.g., on the positive side of a scale), these attitudes were assumed to be less favorable than those toward the dominant (majority) group (Spaniards). Consistent with the idea that evaluations of immigrants are less favorable than those toward natives, Cárdaba, Briñol, Horcajo, and Petty (2013) have showed that evaluations toward the out-group (South American immigrants) were significantly less positive than participant's evaluations of the in-group (Spaniards). That is, even though attitudes toward a South American immigrant were on the positive side of the scale, attitudes were still less favorable than those toward the dominant (majority) group.

Prejudiced attitudes following the second message

After reading the first message and reporting their attitudes toward immigrants, all participants received a second message implying that immigration was potentially problematic. After reading about the potential problems involved in immigration, participants were again asked to report their attitudes toward South American immigrants. This was done on the same five 9-point semantic differential scales used previously. Responses to these attitude items were intercorrelated ($\alpha = .93$) and averaged to create a composite measure of attitudes.

Resistance to change

To create an index of attitude change in response to the second message, we subtracted Time 1 attitudes from Time 2 attitudes (for a similar procedure, see, e.g., Tormala, Clarkson, & Petty, 2006). Higher attitude change scores reflected less resistance. As noted, this measure is particularly relevant to this research because individuals who possess attitudes based on high thinking processes are predicted to be better able to defend against counter-attitudinal messages compared to those who have equally extreme attitudes that resulted from low thinking processes.

Results

All dependent measures were submitted to a multiple regression analysis, with persuasive message (message vs. control; dummy coded) and extent of elaboration (continuous variable) as the independent variables. Analyses followed the regression procedures outlined by Aiken and West (1991). Thus, scores on extent of elaboration were centered by subtracting the mean from each person's score. That is, this continuous variable was mean centered to reduce multicolinearity concerns when computing interaction terms. Following the suggestion of Cohen and Cohen (1983), the main effects were interpreted in the first step of the regression and the two-way interaction in the second step.

Prejudiced attitudes (Time 1)

As expected, the results of a Persuasive Message × Elaboration regression analysis on attitudes at Time 1 revealed only a significant main effect of the persuasive message, $\beta = .27$, $t(69) = 2.39$, $p = .01$. This main effect indicated that participants' attitudes were more favorable toward immigrants after reading the relevant persuasive message ($M = 5.29$, $SD = 1.38$) than after reading the control message about the benefits of eating vegetables ($M = 4.49$, $SD = 1.33$). Moreover, the main effect of elaboration ($p > .97$) and the two-way interaction ($p > .33$) were not significant, indicating that regardless of level of thinking the relevant message produced the same reduction in prejudice.

Resistance to change

We submitted the attitude change index (which considered attitudes at Time 1 and Time 2) to analysis. As expected, there was an interaction between persuasive message and extent of elaboration, $\beta = -.29$, $t(65) = -2.48$, $p = .01$. Only participants who received the persuasive message in favor of immigrants showed the effect for extent of elaboration $\beta = -.55$, $t(38) = -4.11$, $p < .001$. Attitudes resisted less in response to the second message when participants reported having thought less (i.e., low elaboration) rather than more (i.e., high elaboration) about the relevant message. Resistance was not affected by extent of elaboration for those who received the control message, $\beta = .12$, $t(25) = .61$, $p = .54$.[1]

Discussion

The results of Experiment 1 showed that prejudiced attitudes can be changed after reading a persuasive message in favor of the benefits of immigration. Importantly, the initial effect of the persuasive treatment was evident regardless of the amount of thinking devoted to the message. That is, individuals high and low in elaboration both reported equivalently more positive attitudes toward immigrants after reading the persuasive (vs. control) message. This is consistent with previous research in the domain of persuasion, showing that attitudes can change through thoughtful processes and non-thoughtful processes to a similar extent.

Most important is the fact that, although elaboration did not influence attitude favorability after the first message, the results revealed that individual differences in the

[1]When we submitted attitudes at Time 2 (after receiving the attacking message) to the multiple regression analysis including attitudes at Time 1 as a covariate, attitudes at Time 1 significantly predicted attitudes at Time 2, $\beta = .68$, $t(65) = 7.99$, $p < .001$, and the predicted significant interaction between message and elaboration on this measure also emerged, $\beta = .24$, $t(65) = 2.93$, $p = .005$.

amount of thinking reported by participants affected an objective measure of attitude resistance. Thus, high (vs. low) elaboration participants formed stronger attitudes as a result of the persuasive treatment to reducing prejudice. Although participants were initially affected by the persuasive message in favor of South American immigrants regardless of the amount of thinking, the resulting initial attitudes were more resistant to change for high-elaboration participants. Thus, attitudes of high-elaboration individuals changed less (i.e., remained more favorable) after reading the anti-immigrant article than did the attitudes of low-elaboration individuals.

High-elaboration participants presumably resisted the second message because their careful analyses of the first message motivated and enabled them to counterargue the attack. Low-elaboration participants presumably succumbed to the second message because they were less motivated or able to defend their new attitudes. In other words, having thought about the initial position carefully not only enables people to bolster their initial attitudes and counterargue an opposing message, but probably also gives them the motivational confidence to do so.

Finally, it is important to note that resistance was assessed objectively in this study by exposing participants to a second counter-attitudinal message and measuring the resulting attitudes. As shown, measured elaboration predicted objective resistance. It is an open question whether manipulated (rather than measured) elaboration would produce similar effects. This is an important issue given that the present study only provided correlational evidence for our critical hypothesis, and more evidence of the causal role of elaboration is desirable. It is always possible that reports of elaboration were confounded with other variables related to resistance to change. For example, it might be possible that participants who reported higher (vs. lower) subjective thinking were precisely those who wanted to behave more coherently, or to be perceived as more consistent (showing more correspondence between attitudes at Time 1 and Time 2). For that reason, in the next experiment, elaboration was directly manipulated (rather than measured).

On the other hand, it is not clear whether elaboration only predicts objective resistance or also is capable of affecting the subjective feeling of resistance. Thus, the next study tested the extent to which participants have some subjective sense of the enhanced resistance of their attitudes following an experimental manipulation of thinking. Having a measure of subjective resistance is important because, among other things, it predicts other strength-related outcomes. Furthermore, assessing subjective resistance is important because the extent to which people decide to expose themselves to counter-attitudinal information often depends more on what they *think* they can defend than on what they actually can defend (e.g., Wilson & Brekke, 1994). Indeed, rating of subjective resistance plays an important role in decision making, information processing, and actual attitude change (Briñol & Petty, 2012).

Study 2: subjective resistance

Study 2 was designed to replicate and extend the findings of the prior study. The first study showed that attitudes toward South American immigrants formed through high (vs. low) elaboration processes were stronger according to a measure of objective resistance to change. In this second study, we examine whether elaboration can also affect attitude strength using the subjective measure of *perceived resistance*. Perceived resistance has been defined as the subjective perception that one's opinion could resist persuasion if it were attacked, and has been used as a subjective indicator of attitude strength (e.g., White, Tashchian, & Ohanian, 1991). The perception that people have with regard to the resistance of their attitudes has been shown to play an important role in decision making (e.g., exposure to counter-attitudinal information; Albarracín & Mitchell, 2004). Furthermore, perceived resistance has been found to influence information processing and actual attitude change (Briñol, Rucker, Tormala, & Petty, 2004). Another benefit of this measure is that it allows us to see whether or not participants have some subjective sense of the enhanced strength of their attitudes. In the prior study, we looked at actual resistance and it was not clear if participants were aware that their attitudes were stronger. Awareness of strength could provide some motivation to defend one's attitude and act upon it.

Most importantly, in the current study, we sought to conceptually replicate our prior findings by manipulating (rather than measuring) the key moderating variable: elaboration. Although the measure of elaboration used in our prior study has proven effective for distinguishing high and low thinking individuals, it provides only correlational evidence for our critical hypothesis. Given the importance of elaboration in the present research, we manipulated this variable in order to permit more causal conclusions with respect to extent of thinking. Therefore, instead of measuring the extent to which participants attended to and elaborated on the information contained in the persuasive message, in this study we manipulated the extent of thinking by framing the message as personally relevant or irrelevant (e.g., see Petty & Cacioppo, 1979) and by enhancing (or undermining) the ability to think about the initial proposal with a distracting secondary task (e.g., see Petty, Wells, & Brock, 1976).

Following the logic outlined above, we predicted that participants who thought more about the persuasive message (high-elaboration condition) would perceive their attitudes to be more resistant to change than participants who thought relatively less about the message (low-elaboration condition) despite equivalent reductions in prejudice.

Method

Participants and design

A total of 103 undergraduates (81 women and 22 men; mean age: 19.81; $SD = 1.81$; White Europeans) from the Universidad Autónoma de Madrid were randomly assigned to the conditions of a 2 (pro-immigration message vs. control) × 2 (extent of elaboration: low vs. high) design. Students participated in partial fulfillment of a requirement for their Introductory Psychology courses.

Procedure

On arrival at the laboratory, as in the first study, participants read a persuasive message in favor of South American immigrants or an irrelevant message about the benefits of eating vegetables. They were then asked to complete a paper questionnaire designed to assess their attitudes about South American immigrants and the subjective resistance of those attitudes.

Independent variables

Persuasive message

The message in favor of South American immigrants was the same as that used in Study 1, and was designed to contain both strong arguments and positive cues. The control message on the benefits of vegetables was also the same as in Study 1.

Extent of elaboration

In this study, the extent of thinking was manipulated by framing the message as personally relevant or irrelevant (e.g., Petty & Cacioppo, 1979) and by enhancing or undermining the ability to think about the proposal (e.g., Petty et al., 1976). Participants in the high-elaboration condition were told that the message had to do with their self-concept whereas those in the low-elaboration conditions were not given this information (for a similar induction, see, e.g., Briñol, Petty, & Wheeler, 2006). Furthermore, the ability to think in the low-elaboration condition was restricted by the presence of a distracting secondary task, whereby while reading the persuasive message participants were required to memorize an eight-digit number (see Wegener et al., 2006). To further convey the importance of this memorizing task, each participant was asked to report the number at the end of the questionnaire. Moreover, participants in the low-elaboration condition had half of the time to read the message than those in the high-elaboration condition.

Dependent variables

Prejudiced attitudes

After reading the persuasive message, participants reported their attitudes toward South American immigrants. These attitudes were assessed by averaging the responses to the same five 9-point scales as in the previous study ($\alpha = .90$).

Perceived resistance

After reporting their attitudes toward immigrants, participants were asked to rate how strong they perceived those attitudes to be. More specifically, they were asked to rate the extent to which they thought their attitudes would be likely to change in the future. Perception of change was rated on a 9-point semantic differential scale anchored at 1 (*extremely likely to change*) and 9 (*not at all likely to change*).

Elaboration of manipulation check

At the end of the experiment, participants completed a manipulation check for the elaboration induction. Specifically, they were asked to report how much they thought about the message on two items: (a) "I paid a lot of attention to the information that was presented to me" and (b) "I thought a lot about the information and the arguments that were presented to me." Responses to these two items were given on 1–9 point scales anchored by "not at all" and "very much." Ratings on these items were highly intercorrelated ($r = .74$, $p < .001$), so they were averaged to form one overall elaboration index. These items were included at the end of the study so they would not influence the perceived resistance measure.

Results

All dependent measures were submitted to a 2 (extent of elaboration: low or high) × 2 (persuasive message: message in favor of South American immigrants vs. control) analysis of variance (ANOVA).

Manipulation check for elaboration

As expected, the ANOVA on the elaboration measure showed that participants assigned to the high-elaboration condition reported having thought more about the persuasive communication ($M = 7.89$, $SD = .86$) than participants who were assigned to the low-elaboration condition ($M = 7.01$, $SD = 1.47$), $F(1, 101) = 13.71$, $p < .001$.

Prejudiced attitudes

Consistent with our expectations, analysis of the prejudiced attitudes revealed a main effect for persuasive message.

Participants showed relatively more favorable attitudes toward South American immigrants after reading the relevant persuasive message ($M = 5.87$, $SD = 1.36$) than after reading the control message about eating vegetables ($M = 5.31$, $SD = 1.4$), $F(1, 101) = 3.87$, $p = .05$. Apart from this, there was no effect for extent of elaboration ($p > .48$), and the two-way interaction was not significant ($p > .62$) replicating the findings of our first study that regardless of extent of elaboration, the persuasive message appeared to influence the measure of attitudes toward the stigmatized group.

Perceived resistance

Results of the 2×2 ANOVA on the resistance measure revealed a significant main effect of elaboration, such that participants who thought more about the message reported stronger attitudes ($M = 6.56$, $SD = 1.48$) than participants in the low-elaboration condition ($M = 5.76$, $SD = 1.80$), $F(1, 99) = 3.99$, $p = .04$. This main effect was qualified by the expected interaction between message and elaboration, $F(1, 99) = 3.99$, $p = .04$, revealing that the effect of elaboration was only significant for participants who received the relevant message but not for those in the control group. As predicted, participants who thought more about the relevant message perceived their attitudes about South American immigrants to be more resistant to change ($M = 6.93$, $SD = 1.34$) than those who thought less about that message ($M = 5.62$, $SD = 1.80$), $t(59) = -3.25$ $p = .002$. For participants who read the control message, perceived resistance of prejudiced attitudes did not differ for those in the high ($M = 6.00$, $SD = 1.54$) and low ($M = 6.00$, $SD = 1.89$) elaboration conditions, $t(40) = .00$, $p > .90$.

Discussion

As in the previous study, the results of this experiment revealed that the attitudes about immigrants of high and low-elaboration individuals were statistically comparable immediately after the presentation of the persuasive message in favor of South American immigrants. However, the participants in the high (vs. low) thinking condition perceived their attitudes to be more resistant to change. Although we used a different procedure to examine the amount of thinking in this study, and a different measure of attitude strength, these findings replicate those obtained in our previous study. Attitudes toward South American immigrants were not only more resistant to change (Study 1) for participants engaged in high (vs. low) thinking about the anti-prejudice message, but, as shown by this study, were also perceived to be that way.

General discussion, summary, and conclusion

Taken together, our two studies revealed that attitudes toward stigmatized groups can be affected not only by simple processes that require little thinking (as suggested by much previous research) but also by traditional elaborative forms of rhetorical persuasion (as implied by the attitude change literature). Across both studies, we found that prejudiced attitudes toward stigmatized groups could be reduced through persuasive messages. Most importantly, our studies suggested that persuasion treatments can be designed so that the degree of attitude change is equivalent for situations in which there is high versus low message elaboration. However, although both high and low thinking processes were associated with the same changes in attitude favorability (i.e., reduced prejudice), the consequences of those processes were quite different. The changes produced in high-elaboration conditions were found to differ from less deliberative changes produced by the same persuasive treatments in a number of important ways. Specifically, the present research revealed that changes produced by high-elaboration processes were more resistant (Study 1) to further attacks than equivalent changes produced by less thoughtful mechanisms. Furthermore, participants apparently were aware of the increased strength of their attitudes (Study 2) perhaps motivating them to defend their attitudes and use them in guiding behavior. Understanding the nature of the processes by which attitudes change is essential because it informs us about both the immediate and long-term consequences of those changes. The current research indicates that the processes by which prejudice is changed are also important to understand because of the consequences involved. In cases of high (vs. low) elaboration (i.e., situational high deliberative thinking individuals, high personal relevance situations), changes in both objective and subjective attitude strength measures were observed for prejudicial attitudes. This result is notable because there are many prior studies examining ways to reduce prejudice, but, to our knowledge, prior work has not examined whether the mechanism of change matters.

Although our two studies focused exclusively on the exploration of resistance (actual and perceived), future studies should also explore other potential consequences of changes in attitude strength dependent upon the extent of thinking. It seems plausible to argue that changes in prejudiced attitudes, like changes in any other attitude object (Petty et al., 1995), induced through relatively deliberative processes might also be particularly persistent (Cárdaba et al., 2013) and impactful for information processing and behavior. For example, since elaboration strengthens object–evaluation associations, the more thinking a person does, the more likely the evaluation is not only to be resistant when challenged (and to be perceived as resistant), but also to have an impact on judgment and behavior.

Finally, showing the impact of elaboration on different indexes of resistance (actual and perceived) is important because these two constructs can sometimes be relatively

independent. Past research has shown that people can see no change in their attitudes when there actually has been change and see some change when there actually has been none (see Briñol & Petty, 2012, and Schryer & Ross, 2012, for reviews). Future research should examine whether changes based on high-elaboration processes are more likely to lead to correspondence between actual and perceived resistance than changes based on low-elaboration processes.

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