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# Resistance and Susceptibility to Persuasion Across the Political Spectrum

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The present study examined how political ideology may interact with persuasion occurring at varying levels of awareness to predict explicit attitude change of liking for coffee and tea. Sixty-three New York University students (37 female, 26 male) were influenced at either an implicit level (i.e., outside of awareness), using a modified evaluative conditioning procedure, or at an explicit level, by reading strong arguments, to either like coffee and dislike tea or vice versa. We found a significant interaction between political ideology and type of persuasion, such that conservatives exhibited greater attitude change following implicit rather than explicit persuasion, whereas liberals exhibited greater attitude change following explicit rather than implicit persuasion. Our findings are interpreted in terms of the psychological needs underlying ideological orientation, along with insight from the Associative Propositional Evaluation model and the Heuristic-Systematic Processing model.

Individuals are constantly bombarded with information aimed at changing their attitudes and actions. In the political arena, for instance, political leaders often put forth persuasive arguments, arguing for or against various social and economic policies. Just as the content of these persuasive messages can vary, so can the strategy used to communicate them in a manner that will appeal to the intended audience. However, even the most powerful persuasion attempts are sometimes met with resistance. What determines which strategy will be most effective, and what role might political orientation play in how individuals process persuasive messages? Rational or intuitive appeals may be differentially effective for individuals who vary in the extent to which they are motivated to maintain consistency in their attitudes, trust their immediate “gut reactions,” or carefully scrutinize persuasive information. In this research, we examine how the effectiveness of different types of persuasion (i.e., rational, explicitly presented persuasion attempts, as compared to indirect persuasion attempts target-

ing implicit associations) may vary as a function of the persuasion target’s political ideology.

Recent research suggests that an individual’s political orientation is related to differences in his or her motivation to seek certainty and stability and to avoid ambiguity and complexity (e.g., Jost, Glaser, Kruglanski, & Sulloway, 2003; Jost, Napier, Thorisdottir, Gosling, Palfai, & Ostafin, 2007). Political ideology thus seems to have implications for information processing and consequently for resistance and susceptibility to different types

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of persuasion individuals may encounter. Information about an individual's political orientation may provide psychologists, pollsters, politicians, and marketers with important insight into an individual's behavior in the persuasion context.

### *Attitudinal Structure and Ideology as Motivated Social Cognition*

Mounting evidence suggests that psychological needs are related to political orientation (Jost et al., 2003, 2007). The motivated social cognition perspective on ideology has repeatedly demonstrated a link between political conservatism and a set of related psychological tendencies, including intolerance of ambiguity, uncertainty avoidance, and the Need for Cognitive Closure (Jost et al., 2003, 2007). On the other hand, political liberalism is associated with an integratively complex cognitive style, Openness to Experience, and Need for Cognition (Jost, 2006; Jost et al., 2003, 2007). According to this perspective, differences in political orientation are not merely due to political polarization (e.g., Fiorina, 2005) or group identity processes (e.g., Cohen, 2003). Instead, political orientation arises as a motivated expression of an individual's psychological needs that serve to manage responses to uncertainty and threat (Jost et al., 2007; Jost, Federico, & Napier, 2009; see also Adorno et al., 1950).

Because ideology is related to a general set of psychological tendencies, it should also predict how liberals and conservatives structure and evaluate non-political objects in their everyday lives. Indeed, research has shown that ideology is related to everyday behaviors and preferences, including living-space organization, interaction styles, and music preferences (Carney, Jost, Gosling, & Potter, 2008). Political orientation is also related to evaluations and attitudinal features (i.e., attitudinal certainty, stability, and ambivalence) across 95 attitudinal domains, both political and non-political in nature (e.g., pro-life vs. pro-choice, Coke vs. Pepsi; Jost, Krochik, & Nosek, in preparation). Conservatives reported having greater attitudinal certainty and higher attitudinal stability over time, whereas liberals exhibited greater attitudinal ambivalence and reported spending more time thinking about their own attitudes (Jost, Krochik, & Nosek, in preparation). Ideology also predicted differences in the relations between self-reported "gut feelings" (i.e., immediate affective reactions) and "actual feelings" (i.e., judgments after deliberation) toward various objects. Specifically, conservatives' self-

reported gut feelings were better predictors of their self-reported actual feelings, as compared to the gut feelings of liberals. In line with this finding, the *implicit attitudes*<sup>1</sup> of conservatives were better predictors of their *explicit attitudes*; that is, conservatives exhibited higher implicit-explicit attitude consistency than did liberals (Jost, Krochik, & Nosek, in preparation).

The idea that liberals and conservatives might differ in how stable and strong they perceive their own attitudes to be *and* in how much consistency actually exists between different measures of those attitudes (i.e., gut vs. actual, implicit vs. explicit) suggests that differences between liberals and conservatives extend beyond self-perceptions. Liberals' and conservatives' predispositions for elaboration and change versus consistency and stability in their everyday attitudes may be related to their underlying psychological needs. In particular, a higher need for stability and certainty may explain why conservatives perceive higher certainty and stability in their attitudes, think less about their attitudes, and exhibit greater consistency between their implicit and explicit attitudes. Hence, the difference in attitude consistency exhibited by liberals and conservatives suggests that their underlying psychological motivations may influence them to process information differently.

Research exploring ideology as motivated social cognition has identified differences in psychological tendencies that may relate to how liberals and conservatives acquire knowledge and process novel and/or counter-attitudinal information. Specifically, the Need for Cognition and Need for Cognitive Closure both describe motivational differences in the tendency to either process complex information in-depth or to seek quick and unambiguous answers. Liberals have been found to exhibit a higher Need for Cognition (Sargent, 2004), which refers to an individual's chronic tendency to enjoy and engage in effortful thinking (Cacioppo, Petty, & Kao, 1984). Conservatives, on the other hand, have been found to exhibit a higher Need for Cognitive Closure (Jost et al., 2003, 2007, 2009; Kimmelmeier, 1997), which refers to an individual's urgent need for answers, as motivated by the desire to reduce confusion or ambiguity (Webster

<sup>1</sup> There are two types of attitudes—implicit and explicit. *Implicit attitudes* are activated quickly and spontaneously, and may not be explicitly endorsed or detectable in self-report measures, whereas *explicit attitudes* are characterized by intent and deliberation (e.g., see Nosek, 2007; see also Gawronski, LeBel, & Peters, 2007).

& Kruglanski, 1994). We reasoned that systematic differences in Need for Cognition and Need for Closure may provide the motivational basis for individuals to react differently to persuasion attempts. A high Need for Cognition or a low Need for Cognitive Closure may motivate individuals to openly scrutinize information, which would increase the likelihood that they would succumb to strong persuasive arguments. On the other hand, a low Need for Cognition or a high Need for Cognitive Closure may motivate individuals to cling to quick closure-providing answers or initial attitudes, which may increase the likelihood that they would resist new counter-attitudinal arguments. A closer inspection of the information processing styles and different reactions to persuasion that may characterize liberals and conservatives could thus shed light on the types of information, both internal and external, that liberals and conservatives may attend to when forming explicit attitudes.

The present study seeks to address several important questions. What types of information do liberals and conservatives rely on to inform their implicit and explicit attitudes, and what type of information processing styles do they employ? What underlying psychological mechanisms could account for such differences between liberals and conservatives, and what are the implications for resistance and susceptibility to different types of persuasion? The present study exposes liberal and conservative participants to an experimental attitude change attempt at an implicit or explicit level in order to observe subsequent changes in their explicit attitudes. Observations in explicit attitude change and/or resistance to persuasion attempts will illuminate the differences in the thought processes of liberals and conservatives. Relating ideology as motivated social cognition to the Associative-Propositional Evaluation model of attitude change provides insight into the possible thought processes that may characterize liberals and conservatives, and how they may behave in the persuasion context.

#### *Linking Ideology to Implicit-Explicit Influence and Attitude Change*

Our predictions build on Gawronski and Bodenhausen's (2006) Associative and Propositional Evaluation model, which distinguishes between processes of attitude change that are quick and intuitive (i.e., associative processes) and those that are more deliberate and effortful (i.e., propositional processes). The implicit and explicit attitudes borne

out of these processes can influence each other under specifiable conditions. In this research, we focus on the conditions under which implicit attitudes are used as quickly available heuristic cues that inform explicit attitudes. We assume that implicit attitudes or associations can be experienced as "gut feelings" (Gawronski, LeBel, & Peters, 2007), which may receive more or less weight in the construction of one's self-reported or explicit attitude, depending on the availability of additional, potentially conflicting cognitions as well as on the motivation and ability to process and integrate these additional sources of information (Chaiken, Wood, & Eagly, 1996; Gawronski & Bodenhausen, 2006).

Under what conditions is a pattern of implicit-to-explicit influence most likely to occur? We argue that when individuals exhibit either a low motivation to expend cognitive effort in processing information and/or a high motivation to attain quick and unambiguous evaluations, they will tend to rely on their implicit attitudes as heuristic cues to inform their explicit evaluations. On the other hand, when motivation and ability to scrutinize all information deemed relevant and important for a given judgment is high, and/or the need to attain a quick answer is relatively low, people should be more likely to engage in systematic processing of information and less likely to rely on implicit attitude heuristics to guide their explicit attitudes. In this case, implicit attitude heuristics may be either rejected as invalid sources of information or overshadowed by other, potentially conflicting propositions that are momentarily considered (Gawronski & Bodenhausen, 2006). Increased deliberation heightens the likelihood that information other than that provided by implicit attitudes will be entertained. Hence, implicit attitudes may be rejected or diluted when considered alongside other, more compelling propositions, as might be the case when an individual high in chronic motivation and ability to expend cognitive effort confronts a strong persuasive argument.

Thus, we propose that people high in the chronic motivation and ability to deliberate, in particular liberals, who should be higher in the Need for Cognition, should exhibit more explicit attitude change following a strong persuasive argument presented at the explicit level. On the other hand, conservatives, who should be lower on the Need for Cognition and/or higher on the Need for Cognitive Closure, are likely to use implicit attitudes to inform explicit attitudes and thus exhibit more ex-

PLICIT attitude change following an implicit persuasion attempt.

*Resistance and Susceptibility to Persuasion Across the Ideological Spectrum*

As elaborated above, the psychological correlates of political conservatism suggest that quickly accessible sources of information may play a greater role in the explicit attitude construction of conservatives (vs. liberals) to the extent that they provide quick, stable, and certain answers. This is consistent with the previous finding that the explicit attitudes of conservatives are better predicted by their implicit attitudes, as compared to the explicit attitudes of liberals (Jost, Krochik, & Nosek, in preparation). Thus, it seems plausible that when implicit attitudes are experimentally manipulated through an implicit persuasion attempt, conservatives' subsequent explicit evaluations should move in the direction of this persuasive influence. Hence, we predict that *following implicit persuasion, conservatives will exhibit greater explicit attitude change than liberals* (Hypothesis 1).

Should this also be the case when the influence attempt takes the form of explicit persuasion, when message recipients realize that they are the targets of persuasive influence? Evidence and intuition suggests that this is unlikely. The very definition of conservatism implies a resistance to change, which may also be reflected in conservatives' attitudes. Conservatives should seek to maintain attitudinal consistency in the face of explicit influence attempts that threaten to destabilize attitudes or reduce attitudinal certainty. On the other hand, liberals may be less motivated to resist potential attitude change resulting from open self-exposure to novel and/or counter-attitudinal information. Such susceptibility to persuasion may result in the integration of the novel and potentially conflicting information into subsequent evaluations, assuming the arguments are truly persuasive and withhold scrutiny. We therefore predict that *following explicit persuasion in the form of strong arguments, liberals will exhibit greater explicit attitude change than conservatives* (Hypothesis 2).

In terms of differences between implicit and explicit persuasion conditions, conservatives should be more likely to succumb to persuasion when it successfully alters their implicit attitudes and more likely to resist when they are aware that persuasion is aimed at changing their attitudes. Thus, we predict that *conservatives will exhibit greater explicit attitude change following implicit vs. ex-*

*PLICIT persuasion* (Hypothesis 3). Liberals, in contrast, should exhibit the opposite pattern. They may remain immune to implicit persuasion by rejecting their gut feelings as a valid source of information, especially to the extent that the gut feelings conflict with multiple other, more compelling cognitions (Gawronski & Bodenhausen, 2006). Hence, they are less likely to be immune to strong persuasive arguments that are presented explicitly. In line with this reasoning, we hypothesize that *liberals will exhibit greater explicit attitude change following explicit vs. implicit persuasion* (Hypothesis 4).

## EXPERIMENT

To investigate these hypotheses, we experimentally manipulated persuasion to occur at either the implicit or explicit level of awareness and measured changes in subsequent explicit evaluations. Because ideology is associated with stable individual differences in general cognitive and motivation styles, distinct patterns of evaluation should emerge regardless of the content being judged. We examined the hypothesized persuasion effects in a non-political domain with regard to the attitude objects *coffee* and *tea*. This comparison was chosen because, in addition to having no obvious political significance, pilot testing had revealed that political orientation was generally unrelated to baseline preferences for coffee vs. tea and that both liberals and conservatives regarded their preferences as relatively moderate in terms of personal importance and elaboration (Jost, Krochik, & Nosek, in preparation). These equivalences were deemed necessary because previous research has indicated that attitudes of high personal importance and high elaboration are especially stable over time and more resistant to persuasion (Barden & Petty, 2008; Krosnick, 1998; Petty, Haugtvedt, & Smith, 1995; Zuwerink & Devine, 1996).

Implicit persuasion was achieved through an "attention and rapid identification task of various beverages," which was actually a modified evaluative conditioning technique that aimed to build positive associations with coffee/tea and negative associations with tea/coffee outside of participants' awareness. Explicit persuasion was an article ostensibly released by the Food and Drug Administration (FDA) consisting of strong arguments for the relative health benefits of coffee/tea to tea/coffee. In order to counterbalance the direction of persuasion, half of the participants were assigned to implicit and explicit persuasion condi-

tions designed to influence participants to like coffee and dislike tea (i.e., a coffee-positive, tea-negative direction of persuasion) or to dislike coffee and like tea (i.e., a coffee-negative, tea-positive direction of persuasion). Our dependent variable was the amount of explicit attitude change operationalized as the change in self-reported liking for coffee and tea.

In the coffee-positive, tea-negative implicit and explicit conditions of persuasion, we expected that following the attention and rapid identification task of various drinks, conservatives would exhibit a greater increase in liking for coffee and disliking for tea as compared to liberals (Hypothesis 1). On the other hand, after reading the FDA article, liberals should exhibit a greater increase in liking for coffee and disliking for tea as compared to conservatives (Hypothesis 2). Comparing across persuasion conditions, we expected that conservatives would exhibit greater change in liking for coffee and disliking for tea after the “attention and rapid identification task of various drinks” vs. reading the FDA article (Hypothesis 3). On the other hand, we expected that liberals would exhibit greater change in liking for coffee and disliking for tea after reading the FDA article vs. the attention and rapid identification task of various drinks (Hypothesis 3). In the tea-positive, coffee-negative implicit and explicit conditions of persuasion, we expected the same trends to occur; however, instead of increased liking for coffee and disliking for tea, individuals would exhibit increased liking for tea and disliking for coffee.

## METHOD

*Participants.* Sixty-three New York University (NYU) students were recruited through a behavioral lab e-mail listserv, flyer posting, and face-to-face recruitment that was conducted at various student lounges, library study areas, and computer labs. Thirty-seven were female and twenty-six were male. Special efforts were made to obtain an ideologically heterogeneous sample. Participants were randomly assigned to an implicit or explicit persuasion condition and paid \$10 for their participation in the study.

*Design.* The experiment was a 2 (political orientation: liberal or conservative)  $\times$  2 (persuasion: implicit or explicit level) between-subjects design. The first independent variable was political orientation, measured as an individual difference varia-

ble. The second independent variable was the type of persuasion manipulation, which occurred at either an implicit (i.e., a modified evaluative conditioning procedure) or an explicit level (i.e., reading a persuasive message composed of strong arguments). Half of the participants in each persuasion condition were influenced to like coffee and dislike tea (i.e., coffee-positive, tea-negative direction of persuasion), and the other half to like tea and dislike coffee (i.e., tea-positive, coffee-negative direction of persuasion). The first dependent variable was the amount of explicit attitude change in liking coffee. The second dependent variable was the amount of explicit attitude change in liking tea.

### *Overview of Procedure*

Upon arrival at the laboratory, participants were told that the purpose of our study was to “assess their thoughts and preferences toward a variety of food and beverage items.” They signed a consent form and were informed that they would complete a series of computerized questionnaires and cognitive tasks. All further instructions appeared on the computer screen. First, participants completed a series of preference questions that assessed their initial explicit attitudes toward coffee and tea. Second, they completed an “accuracy and quickness of response task,” which actually assessed their initial implicit attitudes toward coffee vs. tea. Third, participants received a persuasive influence to like coffee/tea and dislike tea/coffee at either an implicit level (i.e., a modified evaluative conditioning procedure), or an explicit level (i.e., reading persuasive arguments). Fourth, participants’ implicit attitudes were reassessed using the same “accuracy and quickness of response task” used in the second task. Fifth, participants completed the same preference questions that appeared in the first task, which actually reassessed their explicit attitudes toward coffee and tea. Lastly, they indicated their political ideology on a self-placement scale. Upon completion of all tasks, participants were thanked, debriefed, and paid \$10 for their participation.

### *Materials and Procedural Details*

*Initial explicit attitude assessment.* The first task was to answer preference questions for various beverage and food pairs (e.g., “Which do you prefer, milkshakes or fruit smoothies?”). Participants were then informed that the computer had randomly selected one of the food or beverage pairs for them to evaluate in more depth. In actuality, all

participants would evaluate coffee vs. tea throughout the remainder of the experiment. The next set of questions assessed participants' explicit attitudes toward coffee and tea. Participants indicated their liking for coffee (i.e., "How much do you like or dislike coffee?") and tea (i.e., "How much do you like or dislike tea?") using a 6-point Likert-type scale anchored at 1 (*strongly dislike*) and 6 (*strongly like*).

*Initial implicit attitude assessment.* Participants completed an "accuracy and quickness of response task," regarding coffee vs. tea. This task was actually a five-block Implicit Attitude Test (IAT) that was adapted from Gregg, Seibt, and Banaji (2006). The IAT is designed to measure the strength of automatic associations between objects stored in memory (Greenwald, McGhee, & Schwartz, 1998). Participants categorized pictures of items that were related to coffee and tea (e.g., coffee cup, espresso machine, coffee bean, tea cup, tea set, tea bag) and positive and negative evaluative words related to health (e.g., robust, diseased). In each of the five blocks there were 39 trials, and the words and images to be categorized appeared one after another in the center of the screen. Category labels were displayed for the duration of the block on the upper-left or right-hand corner of the computer screen. Participants classified words and images by pressing either the "E" key or "I" key on either side of the keyboard. Their instructions were to select, as quickly and accurately as possible, the key on the same side as the category label that corresponded to the presented word. If they categorized the word correctly, the word disappeared; however, if they were incorrect, a red "X" would flash for 200ms. In either case, the next word appeared 700ms after each key was pressed. In Block 1, participants classified words of contrasting valence (e.g., illness, hardy) into categories of *healthy* or *unhealthy*. In Block 2, they classified images of coffee and tea into the categories of *coffee* and *tea*. In Block 3, participants completed a combination of the two tasks. Blocks 4 and 5 were the same as Blocks 2 and 3, except that the category labels for coffee and tea switched sides.

*Implicit persuasion.* We modified the evaluative conditioning technique, a well-known procedure used to change individuals' implicit associations (Olson & Fazio, 2006), in order to increase its impact on attitude change. In the original task, participants are exposed to a multitude of images sequentially as well as in pairs. Positive or negative associations are created through the paired presentation of target stimuli (CS) with positive or nega-

tive images (US) in order to gradually build a positive or negative association with the target image. In our experiment, instead of presenting target images (i.e., pictures of coffee and tea) side by side with the US, we first presented the affectively-laden US and then followed it with the target images of coffee and tea. This sequential presentation is analogous to the Affect Misattribution Procedure (AMP) developed by Keith Payne and colleagues in order to measure implicit attitudes (Payne, Cheng, Govorun, & Stewart, 2005). This was done so as to elicit affective reactions that would become misattributed to coffee and tea, influencing subsequent reports of liking. A similar procedure was used by B.J. Rydell and colleagues for the purposes of persuasive conditioning, rather than for the purposes of measurement, in an attitude-learning task (Rydell, McConnell, Mackie, & Strain, 2006). However, in the attitude-learning task, conditioning images were presented subliminally (25ms), ensuring that conditioning occurred outside awareness. Due to their increased complexity and similarity, we chose to present our conditioning images supraliminally (350ms) in order to increase their differential impact on the subsequent images of coffee and tea. We also felt this was necessary given the fact that unlike Rydell's attitude-learning task, which used the subliminal US to create implicit associations toward novel attitude objects, our experiment attempts to change directly experienced, pre-existing attitudes, which are more difficult to change.

In our task, participants were instructed to complete an "attention and rapid identification task of various drinks" in which they were asked to press a button when the image of a specified drink appeared. They were told that they would see a series of images presented one at a time in a repeated sequence. The repeated sequence pattern consisted of a set of "x's" (i.e., "xxxxxxx") in the center of the screen, one fast image, and one slow image. They were asked to press the "Yes" button (i.e., the "P" key) or the "No" button (i.e., the "Q" key) in response to the image that appeared in the "slow position." Whenever the exact specified target image appeared, they were to press the "Yes" button. For all other images, they were to press the "No" button. A red "X" would appear if they pressed the wrong button. Whenever the "X" appeared, they were to press the other key immediately. They were told that they would see other images that were similar to the specified target drink image and other images that may distract them, but that they

were only to press the “Yes” button when the “exact image” appeared.

In each trial, the mask of x’s appeared for 2,000ms, the prime image appeared for 350ms, and the target image remained on the screen until participants responded. If participants took longer than 1s to respond to the target image, the red “X” would appear. There were five blocks in total composed of 25 trials in each. Five drink images (e.g., bottle of water, glass of orange juice) were individually presented as the specified target before each block began. For each block, a specified target item appeared at random seven times.

In addition to the target images, participants were occasionally exposed to positive healthy images followed by pictures of coffee/tea (e.g., image of a young man running on a beach followed by a picture of a coffee bean) and negative unhealthy images followed by pictures of tea/coffee (e.g., image of an old man in a hospital bed followed by a picture of a tea bag). These repetitively represented positive-coffee/tea and negative-tea/coffee unconditioned stimulus-conditioned stimulus (US-CS) pairings were designed to elicit misattributions of positive affect to coffee/tea and negative affect to tea/coffee. The pairings were also intended to create associations in memory between positive, healthy, and coffee/tea on one hand; and negative, unhealthy, and tea/coffee on the other.

The majority of the image stimuli were neutral (e.g., umbrella, spoon). Whereas neutral images were completely unrelated to the task, we also included filler drink images (e.g., soda, chocolate milk) to provide a context for the repetitions of the coffee and tea images. US were positive and negative health-related images (e.g., smiling young woman doing yoga, old woman smoking); CS consisted of 60 images (30 coffee and 30 tea) presented randomly without replacement. For a given block, 10 US-CS pairings (i.e., six positive images followed by images of coffee/tea, and four negative images followed by images of tea/coffee) were presented. There were four negative image pairings as compared with six positive image pairings because previous research has shown that negative affect can have stronger effects than positive affect (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Because the present study aimed to influence implicit preferences of coffee and tea equally in opposite directions, we reduced the number of negative image pairings relative to positive image pairings to equalize the intensity and effect of negative and positive affective reactions. There were a total of fifty US-CS pairings across the five blocks.

There were a total of forty filler and neutral pairings across the five blocks. To disguise the repeated pairing of US and CS, specified target images were also occasionally paired with positive, negative, and neutral images. Additionally, to prevent participants from detecting the pattern of conditioning stimuli, we included one distractor trial that was inconsistent with the direction of the persuasion in each block (e.g., a positive-tea pairing would appear in the positive-coffee, negative-tea persuasion condition). Participants were allowed to rest briefly between blocks when the target for the following block was shown.

*Explicit persuasion.* Participants read instructions for a “reading and response task” in which they were instructed to read a paragraph that was ostensibly an immediate press release from the Federal Drug Administration’s (FDA) website about the health benefits of coffee/tea and health risks of tea/coffee. This paragraph was designed to persuade readers to evaluate coffee/tea as healthy and favorable and tea/coffee as unhealthy and unfavorable. An excerpt of the paragraph that participants read appears below:

Although there have been many recent pseudoscientific claims about the potential beneficial health effects of tea (coffee) consumption, there are several reasons to question these claims... Lab research typically employs animal cells to make inferences about human cells, a practice that has been recently criticized by the U.S. National Cancer Institute.... The U.S. Food and Drug Administration has recently concluded that it was highly unlikely that tea (coffee) reduces the risk of breast or prostate cancer.... On the other hand, a growing body of respectable and scientifically valid research points to the health benefits of coffee (tea). Clinical trials funded by the University of Geneva in Switzerland have repeatedly linked the consumption of coffee (tea) to an increase in metabolic rate.... Drinking coffee (tea) [has also been found to] lower stress hormone levels.

*Post-persuasion implicit attitude assessment.* The fourth task was to complete the same “accuracy and quickness of response task” (i.e., IAT) used for the second task, which actually reassessed participants’ implicit attitudes toward coffee vs. tea.

*Post-persuasion explicit attitude assessment.* Fifth, participants completed the same set of questions that appeared in the first task, which actually

reassessed their explicit attitudes of liking toward coffee and tea.

*Political ideology assessment.* The last question assessed the political ideology of the participants in terms of economic issues (i.e., “In terms of economic issues, how liberal or conservative would you say you are?”). Participants indicated their political orientation by self-report using a scale with values ranging from 1 (*extremely liberal*) to 7 (*extremely conservative*; see Jost, 2006). We utilized the economic subscale of ideology because it allowed us to obtain greater variance (and a relatively more symmetric distribution) in political ideology given the high proportion of socially liberal individuals at NYU. Upon completion of all tasks, participants completed a funnel debriefing, were thanked, and were provided \$10 for their participation.

## RESULTS AND DISCUSSION

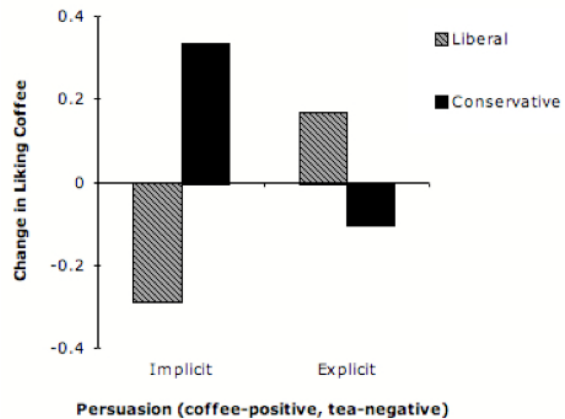
*Political Ideology.* The average of participants’ self-reported political ideology with respect to economic issues was 3.81 ( $SD=1.79$ ). Participants below the mean were categorized as *liberal*, whereas those with scores above the mean were categorized as *conservative*.

*Explicit Attitude Change.* To test our hypotheses that the amount of explicit attitude change would be a function of political ideology and the type of persuasion, we constructed indices of attitude change by subtracting participants’ self-reported attitudes of liking for coffee and liking for tea expressed post-manipulation from their initial attitudes.

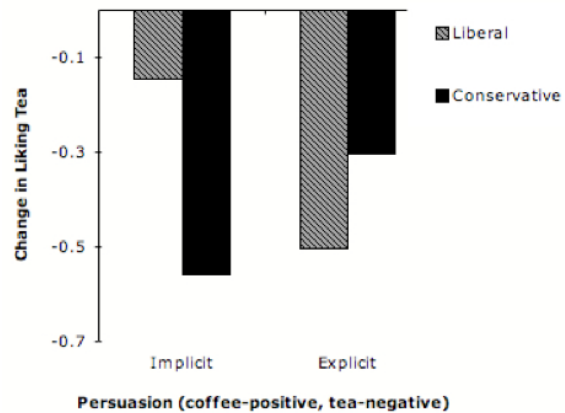
*Coffee-positive, Tea-Negative Direction of Persuasion.* Recall that half of the participants were influenced at either an implicit or explicit level to like coffee and dislike tea (i.e., the direction of persuasion was coffee-positive, tea-negative). Hence, an increase in liking coffee and decrease in liking tea indicates susceptibility to the persuasion attempt.

*Change in liking coffee.* We conducted a 2 (political ideology: liberal vs. conservative)  $\times$  2 (persuasion: implicit vs. explicit) between-subjects Analysis of Variance (ANOVA) to assess the effects of implicit and explicit persuasion on explicit change in liking for coffee among liberals and conservatives. There were no significant main effects ( $F_s < 1$ ), but a significant interaction between our two independent variables emerged in line with our

predictions  $F(1, 25) = 4.61, p = .041$ . Specifically, liberals exhibited a greater increase in explicitly reported liking for coffee ( $M = .17, SD = .41$ ) following implicit vs. implicit persuasion ( $M = -.29, SD = .49$ ),  $t(11) = -1.80^2, p = .05$ , whereas conservatives exhibited a marginally greater increase in liking for coffee ( $M = .33, SD = .71$ ) following implicit vs. explicit persuasion ( $M = -.10, SD = .57$ ),  $t(17) = 1.48, p = .08$  (see Figure 1). Within the implicit persuasion condition, conservatives exhibited a significantly greater increase in liking for coffee than liberals,  $t(14) = -1.97, p = .04$ . Lastly, within the ex-



**FIGURE 1.** Attitude change in liking coffee as a function of persuasion and political ideology in the coffee-positive, tea-negative persuasion conditions.



**FIGURE 2.** Attitude change in liking tea as a function of persuasion and political ideology in the coffee-positive, tea-negative conditions of persuasion.

<sup>2</sup> We used a one-tailed t-test because it provided a more liberal p-value given our small sample size and the direction of our predictions.

PLICIT persuasion condition, the expected trend that liberals would exhibit a greater increase in liking for coffee than conservatives was non-significant ( $t(14) = 1, p = .17$ ). The visually observable trends were consistent with our predictions, as can be seen in Figure 1.

*Change in liking tea.* Visual inspection of cell means in Figure 2 suggests that liking for tea changed in a manner parallel to the pattern described above; however, none of the differences attained conventional levels of statistical significance. For instance, the effects of ideology and persuasion type were nonsignificant (all  $F_s < 1$ ). Whereas liberals exhibited a marginal decrease in explicitly reported liking for tea following explicit ( $M = -.50, SD = .55$ ) rather than implicit persuasion ( $M = -.14, SD = .38$ ),  $t(11) = 1.39, p < .10$ , the expectation that conservatives would exhibit a greater decrease in liking for tea following implicit ( $M = -.56, SD = 1.51$ ) rather than explicit persuasion ( $M = -.30, SD = 1.06$ ) was not supported,  $t(17) = -.43, p = .34$ . Liberals were no more likely than conservatives to be affected by the explicit persuasion attempt,  $t(14) = -.43, p = .34$ , and conservatives were no more likely than liberals to be affected by the implicit persuasion attempt,  $t(14) = .70, p = .25$ .

*Tea-Positive, Coffee-Negative Direction of Persuasion.* Half of the participants were influenced at an implicit and explicit level to like tea and dislike coffee (i.e., the direction of persuasion was tea-positive, coffee-negative). Hence, an increase in liking tea and a decrease in liking coffee indicated susceptibility to the persuasion attempt.

*Change in liking coffee.* With respect to changes in liking for coffee, although visual inspection of the data seems to indicate that there may be trends consistent with our hypotheses, the effects of ideology and persuasion failed to reach significance (all  $F_s < 3$ ). Specifically, the hypothesis that liberals would exhibit a greater decrease in liking for coffee following explicit ( $M = -.38, SD = .52$ ) vs. implicit persuasion ( $M = -.29, SD = .49$ ) was not supported,  $t(13) = .34, p = .37$ , nor was the expectation that conservatives would exhibit a greater decrease in liking for coffee following implicit ( $M = -.43, SD = .53$ ) vs. explicit persuasion ( $M = -.14, SD = .38$ ),  $t(12) = -1.15, p = .14$ . Contrary to expectations, liberals were no more likely than conservatives to be affected by the explicit persuasion attempt,  $t(14) = 1.00, p = .17$ , and conservatives were no more likely than liberals to be affected by the implicit persuasion attempt,  $t(14) = -1.97, p = .31$ . The pattern of means is illustrated in Figure 3.

*Change in liking tea.* There were no significant main effects (all  $F_s < 1$ ), but a marginally significant interaction between our two independent variables emerged in line with our predictions ( $F(1, 25) = 2.73, p = .11$ ). Specifically, conservatives exhibited a greater increase in liking for tea following implicit ( $M = .29, SD = .95$ ) rather than explicit persuasion ( $M = -.42, SD = .53$ ),  $t(12) = 1.73, p = .05$  (see Figure 4). On the other hand, the expectation that liberals would exhibit a greater increase in liking for tea following explicit ( $M = -.13, SD = .35$ ) rather than implicit persuasion ( $M = -.14, SD = .38$ ) was not supported,  $t(13) = .34, p = .46$ . In the implicit persuasion condition, conservatives were not significantly more likely than liberals to exhibit an

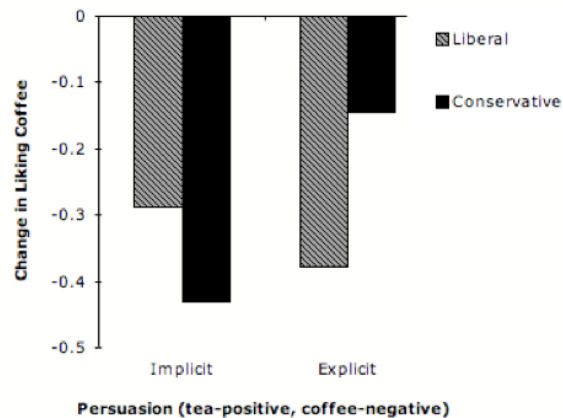


FIGURE 3. Attitude change in liking coffee as a function of persuasion and political ideology in the tea-positive, coffee-negative conditions of persuasion.

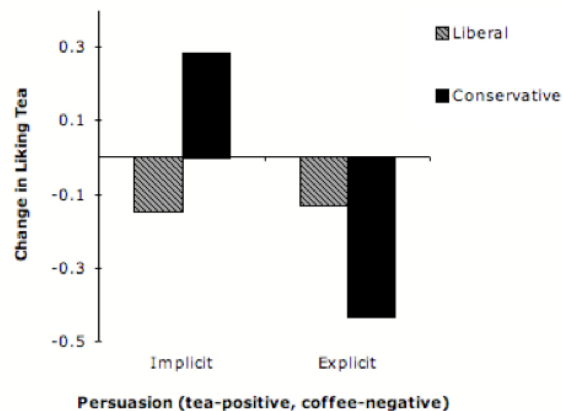


FIGURE 4. Attitude change in liking tea as a function of persuasion and political ideology in the tea-positive, coffee-negative conditions of persuasion.

increase in liking for tea,  $t(14) = .70$ ,  $p = .15$ . In the explicit persuasion condition, the comparison between liberals and conservatives with respect to increased liking for tea approached significance  $t(14) = -.43$ ,  $p = .11$ .

## GENERAL DISCUSSION

The present study tested the following predictions: (1) Following implicit persuasion, conservatives would exhibit greater explicit attitude change, as compared to liberals, (2) Following explicit persuasion, liberals would exhibit greater explicit attitude change, as compared to conservatives, (3) Conservatives would exhibit greater explicit attitude change following implicit rather than explicit persuasion, and (4) Liberals would exhibit greater explicit attitude change following explicit rather than implicit persuasion. The results supported these hypotheses to some extent. Theoretical support was demonstrated by patterns of resistance and susceptibility to persuasion that emerged with respect to different types of persuasion.

When persuaded in favor of the health benefits of coffee and against the health benefits of tea, liberals were susceptible to explicit persuasion but not implicit persuasion. Within the implicit persuasion condition, conservatives showed greater attitude change than liberals, whereas within the explicit persuasion condition, the expectation that liberals would show greater attitude change than conservatives was marginally significant.

In line with our predictions, political ideology interacted with the type of persuasion to predict differences in attitude change in the context of liking for coffee. A significant difference between attitude change among conservatives and attitude change among liberals was found in the implicit persuasion condition. When participants were influenced to like coffee and dislike tea on an implicit level, conservatives showed greater change in liking for coffee than did liberals. Furthermore, there was a marginally significant difference in attitude change across type of persuasion among liberals. After liberals read arguments about the relatively greater health benefits of coffee vs. tea, they showed greater change in liking for coffee than when they were influenced on the implicit level to prefer coffee.

We also observed other differences that were in the hypothesized direction, but they did not reach significance, perhaps due to our small sample

size. Visual inspection of the means suggested that conservatives showed greater change in liking for coffee when they were implicitly influenced to like coffee and dislike tea than when they read strong explicit arguments persuading them to move in the same direction. Additionally, after participants read the strong arguments for the health benefits of coffee and the health drawbacks of tea, liberals showed greater change for liking coffee than did conservatives. These patterns were also exhibited for liking tea, although they did not reach significance.

In the tea-positive, coffee-negative direction of persuasion, some of the visually inspected trends in resistance and susceptibility were consistent with our hypotheses, but the interaction was not significant in the case of liking coffee. However, with regard to liking tea, conservatives exhibited a significantly greater increase in liking for tea when they were implicitly influenced to like tea and dislike coffee than when they read explicit arguments detailing the health benefits of tea and the drawbacks of coffee.

Overall, the data provide some support for the idea that differences in the information processing styles of liberals and conservatives are manifested in terms of relative susceptibility to strong arguments and implicit attitude change in the context of persuasion.

We derived our predictions by integrating the literature on the psychological underpinnings of ideology with the literature on implicit-explicit relations and attitude change. In line with our reasoning, conservatives exhibited greater attitude change following implicit persuasion, whereas liberals exhibited greater attitude change following explicit persuasion. These findings suggest that conservatives, as would be expected given greater needs for certainty, stability, and quick answers, used their experimentally manipulated implicit attitudes, or "gut feelings," as heuristic cues to inform their explicit attitudes. The pattern of implicit-to-explicit processing may account for why conservatives exhibited greater implicit-explicit attitude consistency than liberals in previous research (Jost, Krochik, & Nosek, in preparation). In contrast, liberals seemed to be less inclined to integrate experimentally manipulated "gut feelings" into their explicit evaluations. Instead, liberals' attitudes changed when persuasion was presented in the form of explicit arguments. This effect could potentially be explained by liberals' heightened openness to potentially counter-attitudinal information, increased motivation to process novel information

systematically, and their higher ability to integrate complex information into their pre-existing attitudes. The fact that the explicit attitudes of liberals did not reflect the influence of their experimentally manipulated implicit attitudes suggest that liberals place less weight on implicit attitudes as sources of information when formulating their explicit evaluations, resulting in lower implicit-explicit attitude consistency.

These differences between liberals and conservatives in the pattern of implicit-to-explicit influence resonate with the *Heuristic-Systematic Model* of information processing (Chaiken, Wood, & Eagly, 1996). According to this perspective, when ability and motivation to process information, such as a counter-attitudinal persuasive message, is low, reliance on mental shortcuts is more likely. Conversely, when motivation and ability to process is high, people are more likely to engage in systematic information processing, expending effort and care to scrutinize issue-relevant information (Chaiken, Wood, & Eagly, 1996).

The motivational differences that lead to heuristic and systematic processing map onto the psychological profiles of liberals and conservatives. In terms of heuristic processing, chronically low motivation and ability to scrutinize information has been shown to be related to the Need for Cognitive Closure. Research shows that people high in the Need for Cognitive Closure are more likely to engage in heuristic processing, such as basing their judgments of argument strength on the perceived authority of the source of the message (Klein & Webster, 2000; Kruglanski, Webster, & Klem, 1993). However, chronically high motivation and ability to engage in effortful thinking, which defines the Need for Cognition, has been linked to more systematic processing of strong arguments (Cacioppo, Kao, Petty, & Rodriguez, 1986; Petty & Priester, 1995). The greater Need for Cognition exhibited by liberals may explain why liberals were more persuaded by explicit persuasion than were conservatives. In addition, conservatives may have resisted this explicit persuasion attempt because changing their attitudes may interfere with the desired psychological end-states of attitudinal certainty or stability.

#### *Limitations and Future Directions*

Our data provide intriguing evidence and insight into how the psychological needs underlying political ideology influence cognitive processes, implicit-explicit attitude relations, and responses to persua-

sion presented at different levels of awareness. Despite the importance of this contribution, some limitations exist. First, our small sample size may have limited our power to detect true differences between groups. Second, although both liberals and conservatives participated in our study, the sample used in this study was not sufficiently diverse ideologically because New York University students are predominantly liberal. Third, participants reported (and thereby “committed” to) their attitudes right before the persuasion took place, which may have limited the effectiveness of the persuasion attempt and subsequent change in self-reported attitudes. On a related note, participants with very strong initial attitudes about coffee and tea may be resistant to attitude change altogether. Fourth, the attitude object was non-political and directly tied to experience, which to some extent limits the applicability of our results to other types of attitude domains (e.g., political issues).

In spite of these limitations, the findings provide further support for ideology as motivated social cognition, exemplify a novel coalescence of theory from political psychology and attitudes literature, and illustrate the power of political orientation as a predictor of everyday behavior. The study not only advances scientific knowledge on the processes underlying liberal and conservative thought, but also demonstrates that different psychological processes are involved in how liberals and conservatives formulate, process, and modify attitudes, whether political or non-political in nature.

The systematic testing of our predictions regarding these differences has important implications for the field of psychology as well as for the political domain. No previous research has yet provided direct evidence of the link between ideology and basic cognitive and motivational processes. Thus, understanding how different psychological needs, motivations, and prior attitudes inform the responses of individuals across the ideological spectrum to external sources of information constitutes a substantial contribution to the fields of social and political psychology. Additionally, the results are useful for analysts, strategists, and electoral candidates in the political arena who desire to understand, predict, and persuade constituents across the ideological spectrum. The dynamics of political influence will be illuminated when differences between liberal and conservative audiences are clarified in terms of the basic processes of message processing, resistance, and attitude change. Potential areas that may be informed include campaign

strategies, electoral outcomes, communication between leaders and the public, political participation, and functionality in representative government.

Further research is needed to provide more details regarding the differences in how the implicit and explicit attitudes of liberals and conservatives interact, and for the role of affect in molding attitudes. Do liberals and conservatives differ in the intensity of their immediate affective implicit attitudes (e.g., “gut feelings”), or does the difference between liberals and conservatives emerge in how they cognitively process their implicit attitude information? It could be that liberals consider implicit attitude information in a deliberative fashion, and then reject it in light of more compelling strong arguments. Alternatively, liberals may have automatized a tendency to suppress implicit attitude information.

If future research were to establish that differences in systematic vs. heuristic processing of persuasive information characterize liberals and conservatives, we might ask what other heuristics may be useful to conservatives in forming their judgments (e.g., lay theories of resistance, high levels of authority). If conservatives are indeed more susceptible than liberals to peripheral routes of persuasion that rely on heuristic forms of processing, then the identification of effective peripheral cues would have direct value for designing persuasion campaigns and strategies (e.g., framing effects) that could be employed in the political domain (e.g., by political leaders and campaigns to sway public opinion) as well as non-political domains (e.g., commercial advertising).

The psychological needs associated with ideology could play mediating roles in accounting for different styles of information processing. What specific psychological needs lead conservatives and liberals to engage in heuristic vs. systematic processing? For instance, to what extent does high Need for Cognition lead liberals to engage in greater systematic vs. heuristic processing? Identifying the specific needs that might motivate liberals and conservatives to be either receptive or resistant to counter-attitudinal messages could conceivably facilitate more effective communication, understanding, and compromise between opposing parties with respect to social and economic policy.

Research with more representative samples and larger sample sizes would help assess whether our results generalize to broader populations. Also needed are future studies that examine patterns of resistance and susceptibility to persuasion in the

political domain (e.g., market regulation, foreign policy); this research should strive to further clarify potential ideological differences in the predictive value of attitudes on behavior in political (e.g., voting) as well as non-political domains (e.g., consumer choices).

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