The Effects of Involvement and Information Processing on Latitudes of Acceptance:

An Elaboration Likelihood Perspective

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Abstract

Social judgment theory hypothesizes that message recipients compare a message’s position to their initial opinion. This initial judgment then determines the amount of subsequent persuasion. However, little research has examined how latitudes surrounding the opinion – an acceptable margin of positions around the opinion-holder's ideal -- are formed. We examined how information processing affects the development of individuals’ latitude of acceptance width. Across three studies, message quality differentially affected participants’ attitudes and latitudes of acceptance under high-involvement conditions, with weak arguments leading to less persuasion and smaller latitudes of acceptance than strong arguments. Attitudes and latitudes of acceptance for low-involvement participants were not affected by message quality. In addition, participants’ cognitive responses mediated latitude width for high- but not low-involvement participants.

*Keywords:* social judgment theory, latitudes of acceptance, persuasion, elaboration likelihood, involvement
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When faced with a persuasive claim, individuals can use several facets of the information to help form their opinion, such as the relevance of the topic (e.g., involvement) and characteristics of the communication (e.g., message content). These same characteristics help shape re-evaluation of current opinions, and subsequent attitude change. Social judgment theory (Sherif & Hovland, 1961) was designed to better understand the interplay between one’s initial attitudes and a persuasive message’s position by outlining a number of variables that determine successful persuasion. To this end, we report three studies that examine how message recipients’ latitudes of acceptance - critical concepts of social judgment theory - are formed as a function of the amount of effortful processing of the message.

Social judgment theory posits that initial attitudes serve as reference points against which new attitude-relevant information is judged. For example, when faced with a persuasive message, an individual compares the message’s position on the topic to his/her initial opinion (Sherif & Sherif, 1967). Two major advances from this approach relate to the current research. First, understanding an individual’s position on an issue took more than just knowing their score on a scale, but rather the range of opinion statements that one may find acceptable or unacceptable. As Sherif et al. (1965) stated, an individuals’ position “is not represented adequately as a point along a continuum. Different persons espousing the same position may differ considerably in their tolerance around this point.” (p. 222). As such, three different latitudes were hypothesized to more accurately capture one’s position, and understanding these latitudes in relation to the message’s position would determine the persuasive effectiveness of the message. The latitude of acceptance is the range of positions that the message recipient finds
acceptable. The latitude of rejection reflects all of the positions the message recipient finds unacceptable. Finally, the latitude of noncommitment is the range in between the latitude of acceptance and latitude of rejection where positions are neither acceptable nor unacceptable.

Importantly, social judgment theory hypothesizes that the three latitudes do not overlap, that the latitudes of acceptance and rejection are negatively related to each other, and that their location and width along a hypothetical attitude continuum is important in understanding how a message would affect persuasion. For example, messages supporting a position falling within a recipient’s latitude of acceptance should shift that attitude's central point towards the message’s position (i.e., assimilation) and be more persuasive than a message falling within a recipient’s latitude of rejection.

Social judgment theory also predicts that involvement can affect latitude width. Initially labeled as ego-involvement, involvement refers to how important/integral the issue is to the individual (Sherif & Hovland, 1961; Petty & Cacioppo, 1979). The more involving or relevant an issue, the smaller the latitude of acceptance and latitude of noncommitment, and the larger the latitude of rejection gets. That is, as involvement increases, the fewer positions one will find acceptable, the fewer positions one will be neutral on, and the more positions one will find as unacceptable. For highly involving topics, individuals will have relatively small latitudes of acceptance and relatively high latitudes of rejection.

While the focus of involvement in persuasion has been of great interest to scholars across many disciplines, interest in how latitudes affect persuasion in contemporary attitude theory has waned (Albarracín, Johnson, & Zanna, 2005). Contemporary research has demonstrated that involvement is an important moderator of which persuasion processes will occur as well as the consequences of such processes (see Chaiken & Trope, 1999, for a review). One such model, the
elaboration likelihood model (ELM; Petty & Cacioppo, 1986), posits that the extent to which a message topic is involving will determine the amount of scrutiny a message will receive. In other words, involvement associated with a message topic will affect the amount and type of processing a message recipient will engage in, with greater involvement leading to more effortful, elaborative processing. Therefore, similar to social judgment theory, the ELM states that it is important to understand involvement because the processes by which persuasion can occur can influence the effectiveness of the persuasive attempt. In addition, persuasion occurring through more effortful processes may be more likely to persist, resist, and guide future thinking and behavior more than equal amounts of persuasion occurring via less effortful processing (Petty, Haugtvedt, & Smith, 1995).

Perhaps one reason for the recent lack of emphasis on latitudes can be traced to shortcomings when examining persuasion from a social judgment perspective. While some criticisms are directed toward the theory itself, others relate to the methods involved in studying the various theoretical variables (e.g., involvement, latitudes, processing, etc.). For example, one shortcoming is that social judgment theory focuses almost exclusively on message position and affords little attention to message content such as the number and quality of arguments (Johnson, Maio, Smith-McLallen, 2005). This somewhat myopic emphasis on message position, along with the extensive use of deeply involving message topics, has limited the utility of applying the perspective in contexts where less involving topics are likely to be encountered (Petty, Cacioppo, & Haugtvedt, 1992). Research strictly controlling message content also does not allow for the full richness of natural persuasive contexts, including recipient mood, indicators of source credibility, etc. and their interactions with message content (e.g., Chaiken & Maheswaran, 1994).
Petty et al. (1992) also note that contexts in which involvement is high are not always associated with message rejection, as predicted by a social judgment perspective (Sherif & Hovland, 1961). As the ELM outlines, conditions of high involvement paired with a message that is compelling and difficult to counterargue may lead to increased attitude change, compared to weak arguments under the same conditions. That is, strong arguments under high involvement will lessen the likelihood of counterarguing and increase persuasion, relative to weak arguments.

In an attempt to integrate social judgment concepts with an elaboration likelihood perspective, Serio and Doosje (1993) examined how the latitude types affect subsequent processing of information. After measuring participants’ latitudes related to automobiles in light of their environmental impact, participants then read either strong or weak arguments supporting the use of automobiles in light of that impact. Results showed that greater information processing occurred when the messages fell within participants’ latitudes of acceptance and noncommitment than rejection. Thus, initially formed latitudes interacted to influence information processing.

Excepting the research by Serio and Doosje (1993) and others, little research has examined how the quality or strength of information used as a basis for one’s initial opinions and latitudes towards a novel object can vary as a function of involvement with a novel object. Because previous research has focused on topics that message recipients are familiar with and therefore can be are deeply involving, to date there is little research that examines how involvement and information processing may interact to affect initial latitudes of acceptance (e.g., see Petty et al., 1992, for a review). One possibility is that, while attitudes and cognitive responses may change as a function of argument quality in high involvement conditions, latitudes may remain relatively stable and unchanged. That is, attitudes form in a direction
consistent with increased or decreased persuasion and become anchored while the associated latitudes remain stable and unchanged after message exposure. This seems unlikely, however, given that relatively high-involvement attitudes are associated with smaller latitudes of acceptance and larger latitudes of rejection (Krosnick, Boninger, Chuang, Berent, Carnot, 1993) and greater counterarguing (Powell, 1975; Sherif, Kelly, Rogers, Sarup, & Tittler, 1973) than relatively low-involvement attitudes. Because weak arguments are easier to counterargue than strong arguments in high involvement conditions (Petty & Cacioppo, 1986), exposure to weak arguments may result in the formation of a smaller latitude of acceptance by presenting the perception that the position advocated is bad, relative to strong arguments. In other words, the quality of the information used to form attitudes and latitude of acceptance may matter under conditions of high involvement. Thus, shifts in latitudes of acceptance may also occur as a function of argument quality. In sum, rather than a simple shift in latitude width as a function of involvement, we may see such a shift qualified by argument quality.

**The Current Research**

We present three studies that examine the role of information processing on latitude width following a persuasive attempt. Consistent with an ELM perspective, we hypothesize that involvement will interact with argument quality to increase processing of information in high involvement conditions when compared to low involvement conditions. In addition, increased processing will also affect subsequent latitudes of acceptance, such that in high involvement conditions, weak arguments will result in less positive attitudes, greater counterarguing, and smaller latitudes of acceptance than strong arguments. Argument quality will have no discernible effect on attitudes and latitudes of acceptance in the low involvement conditions. In
addition, we also expect counterarguing to mediate the effect of the argument quality manipulation on latitude width.

**Initial pretesting.** Before testing these hypotheses, we conducted a pretest to obtain initial attitudes, the corresponding boundaries for latitudes of acceptance associated with those attitudes, and a related involvement manipulation consistent with a cover story to integrate the latitudes measures for a novel message topic. Seventy-two college students read about six academic policies being considered at their university. Embedded within the policies was the topic of comprehensive final exams. Specifically, participants were told that one bill currently under debate in the university legislature proposes the institution of comprehensive final exams for college seniors as a graduation requirement. Importantly, participants were told that the bill would allow the university to randomly select a certain percentage of graduating seniors to take the comprehensive exam in his or her major. This cover story was used to obtain the minimum and maximum percentages participants would be willing to accept as their measure of latitudes. Participants' latitudes of acceptance were calculated such that the minimum percentage reported by a participant was subtracted from that participant's maximum percentage reported.

Participants then reported their attitudes toward comprehensive final exams on two semantic differential scales (1 = *bad, unfavorable*, 9 = *good, favorable*, respectively). Responses to these items were positively correlated ($r = .65$), and thus a composite measure was created by averaging the scores across the two items.

Table 1 presents the means, standard deviations, and correlations between the variables. As expected, the mean attitude toward comprehensive final exams was below the midpoint of the scale, suggesting that the topic was relatively counterattitudinal. In addition, the correlation between attitudes toward comprehensive final exams and their acceptable percentage and latitude
width were positive and significant, suggesting that, consistent with previous research (e.g., Sherif et al., 1965), more favorable attitudes were associated with a larger latitude width.

We were also interested in examining participants’ estimates of the percentage of students they believe should be randomly selected to participate in the comprehensive exam program in order to incorporate that percentage into the involvement manipulation for the present studies. From a probability standpoint, a higher percentage of students selected to take the exam should be more involving because as the percentage increases, the greater the likelihood that the participant would take the exam. Therefore, in creating the involvement manipulation, we used the pretest data to determine which percentage of participants would be exposed to in the manipulation. We selected a relatively low percentage in the low involvement conditions that was below the average minimum percentage provided by participants, and a relatively high percentage above but near the maximum percentage in the high-involvement conditions to avoid ceiling effects in the latitude measures used in Study 1.

Study 1

Method

Participants and design. One hundred ninety-seven students recruited from a social sciences participant pool at a Midwestern university (123 male; \(M_{age} = 19.49, SD_{age} = 1.38\)) were randomly assigned to a 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) between-participants design.

Procedure. All participants were seated in front of a computer where all manipulations and measured were administered. Participants were told that the purpose of the study was to obtain their attitudes and opinions on an academic issue. All participants then received information about a proposal to implement senior comprehensive exams at the university as a
gauge of the academic quality of graduates. If passed, the comprehensive exam policy would go into effect the following academic year. In essence, participants were told that the policy would require seniors to take and pass an exam in their major area before they could graduate. The policy would allow the university to randomly select a certain percentage of graduating seniors to take the comprehensive exam. Participants were then exposed to the involvement manipulation and then read a message favoring the proposal that contained either weak or strong arguments. Afterwards, participants reported their attitudes, thoughts, and their latitude of acceptance. Finally, participants completed a funnel debriefing and were excused.

**Independent variables.**

**Involvement.** Using the results of pretesting as a guide, we selected 1% and 65% of students to be randomly selected to take the exam to represent the low and high involvement conditions, respectively. That is, half of participants were told that the university would randomly select 1% of the graduating seniors to take the exam (i.e., low relevance). The remaining half were told that the university would select 65% to take the exam (i.e., high relevance).

**Argument quality.** Participants read either five strong cogent or five weak specious arguments advocating implementation of comprehensive final exams (see Petty & Cacioppo, 1986). For example, in the weak argument conditions, participants read:

*Another advantage that students gain by taking the comprehensive exams is that it is considered a fair practice. Graduate students have always had to take a comprehensive exam in their major area before receiving their degrees, and it is only fair that undergraduates should have to take them also.*

Participants in the strong argument condition read:
“In addition to the grade point average improvement, the graduating seniors received a 20% higher salary than those seniors who came from colleges without comprehensive exams. Ninety-two percent of the students that take comprehensive exams have jobs upon graduation. Only 68% of the students that do not take comprehensive exams have jobs upon graduation.”

**Dependent variables.**

**Attitudes.** After reading the message, participants reported their attitudes toward comprehensive final exams on three semantic differential scales (1 = harmful, unfavorable, and do not approve, 9 = beneficial, favorable, and very much approve, respectively), as well as a scale rating how strongly they agreed with the message (1 = strongly disagree, 9 = strongly agree). A composite measure was created by averaging the four items (α = .94).

**Thought favorability.** Participants were given 3 minutes to write down any thoughts they had while reading the message (see Wegener, Downing, Krosnick, & Petty, 1995, for specific instructions). The computer presented each participant’s own listed thoughts sequentially next to the following rating options: positive, negative, neutral, or unrelated to the exam policy. An index of thought favorability was computed by subtracting the number of negative thoughts from the number of positive thoughts and dividing by the total number of thoughts related to the topic. Positive scores indicate greater agreement with the message position (i.e., less counterarguing), whereas negative scores indicate less agreement (i.e., greater counterarguing).

**Acceptable percentage.** After reporting their favorability and thoughts, participants reported their acceptable percentage of seniors required to take comprehensive final exams. Scores ranged from 0% to 100%, and was treated as an additional measure of attitude.

**Latitudes of acceptance.** We also obtained measures associated with participants’ upper and lower boundaries of their latitudes of acceptance. These measures were designed to
correspond with the percentages used in the involvement manipulation and used the same scale as the acceptable dependent measure. First, participants reported the minimum percentage of seniors required to take comprehensive final exams they would be willing to accept (i.e., the lower boundary of participants’ latitude of acceptance). Participants then reported the maximum percentage of seniors required to take comprehensive final exams they would be willing to accept (i.e., the upper boundary).

Results

Attitudes toward the proposal. A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) between-participants Analysis of Variance (ANOVA) revealed the predicted interaction $F(1, 193) = 4.3, p = .04, \eta^2_p = .02$ (see Table 2). That is, strong arguments were more persuasive than weak arguments in the high involvement conditions $t(93) = 2.72, p = .008$ (see Table 2). However, the effect of argument quality in the low involvement conditions was not significant $t(100) = .26, p = .79$. This suggests that, conceptually replicating previous research, the involvement manipulation was successful at affecting information processing, such that processing was higher in the high rather than low involvement conditions.

Thought favorability. We expected a similar pattern using participants’ cognitive responses. A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) ANOVA revealed a main effect of argument quality $F(1, 193) = 5.35 p = .02, \eta^2_p = .03$, with strong arguments ($M = -.02, SD = .56$) eliciting more favorable thoughts (i.e., fewer counterarguments) than did weak arguments ($M = -.20, SD = .62$). Importantly, the predicted interaction was also significant $F(1, 193) = 11.54 p = .001, \eta^2_p = .06$ (see Table 2). That is, strong arguments elicited more favorable thoughts than weak arguments in the high involvement conditions $t(93) = 3.69, p$
< .001. However, the argument quality effect was not significant in the low involvement conditions, \( t(100) = .84, p = .4 \).

**Acceptable percentage.** A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) ANOVA revealed a marginal Involvement X Argument quality interaction \( F(1, 193) = 3.18, p = .07, \eta^2_p = .02 \) (see Table 2). Consistent with the attitude and cognitive response measures, strong arguments led to a higher acceptable percentage (i.e., were more persuasive) than weak arguments in the high involvement conditions \( t(93) = 2.86, p = .005 \). However, the effect of argument quality in the low involvement conditions was not significant \( t(100) = .05, p = .96 \). This suggests that, similar to the attitude measure, strong arguments were more persuasive than weak arguments in the high but not the low involvement conditions.

**Latitude of Acceptance width.** We also examined whether the involvement and argument quality manipulations interacted with the latitudes measures. A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) x 2 (Boundary: lower vs. upper) mixed-design ANOVA revealed a main effect of Boundary \( F(1, 193) = 84.84, p < .001, \eta^2_p = .31 \), with a higher percentage reported in the upper boundary of the latitude of acceptance (\( M = 52.71, SD = 41.32 \)) than in the lower boundary (\( M = 29.59, SD = 34.92 \)). A significant Argument quality x Boundary effect also emerged \( F(1, 193) = 5.23, p = .03, \eta^2_p = .03 \) (see Table 3). Strong arguments had a larger effect on the width of participants’ latitudes of acceptance (\( M = 35.79, SD = 37.37 \) vs. \( M = 64.99, SD = 39.43 \), \( F(1, 193) = 25.2, p < .001 \), than weak arguments (\( M = 24.15, SD = 31.83 \) vs. \( M = 41.94, SD = 40.05 \)). In other words, participants had smaller latitudes of acceptance when provided with weak rather than strong arguments, which confirms our expectations about argument quality moderating the size of latitudes of acceptance. While not predicted by a social judgment theory perspective, this result is expected when considering latitude width in light of
an ELM perspective. Furthermore, we predicted that argument quality would moderate the size of the latitude of acceptance in the high but not low involvement conditions when information processing is relatively high. This prediction was confirmed by a significant Involvement x Argument quality x Boundary interaction $F(1, 193) = 4.72, p = .024, \eta^2_p = .03$. That is, in the high involvement conditions, the Argument quality x Boundary interaction was significant $F(1, 93) = 11.31, p = .001, \eta^2_p = .11$, such that the latitude of acceptance (i.e., the difference between the upper and lower boundary) was smaller in the weak $t(51) = -2.4, p = .02$ than strong argument conditions $t(42) = -5.99, p < .001$. However, in the low involvement conditions, Argument quality did not interact with the Boundary variable $F(1, 100) = .01, p = .94$, suggesting that argument quality did not moderate the size of participants’ latitude of acceptance. This suggests that argument quality can moderate the size of the latitudes of acceptance under conditions of high involvement. In summary, participants were more favorable, reported fewer counterarguments, and larger latitudes of acceptance in the high involvement strong argument conditions, relative to the weak argument conditions.

**Thought mediation of involvement x argument quality effect on latitudes.** Relatively small latitudes of acceptance are associated with greater counterargument generation than larger latitudes of acceptance (Sherif et al., 1973). Importantly, we believe that this should particularly be the case in high involvement conditions. In other words, counterarguments should mediate the moderation of the involvement x argument quality effect on latitudes of acceptance (i.e., mediated moderation, Wegener & Fabrigar, 2000). Therefore, we examined whether counterarguments mediated the effect of the Involvement X Argument quality effect on the width of participants’ latitudes. We first created participants’ width of their latitude of acceptance by subtracting the lower boundary from the upper boundary. Larger difference scores reflect larger
latitudes of acceptance. In addition, lower numbers indicate a lower acceptable minimum/maximum percentage of students who should be required to take the comprehensive exam, whereas higher numbers reflect a higher acceptable minimum/maximum percentage of students who should be required to take the comprehensive exam.

To test this hypothesis, we used the PROCESS macro for SPSS (Hayes, 2013) to examine the indirect effect and the associated 95% confidence interval of counterarguments on latitudes. The bootstrapping analyses randomly drew cases from the sample data (with replacement) and created 5000 bootstrap data sets of equal size to the original sample. Each data set supplied an estimate of the indirect (mediational) effect of the potential mediator. The Involvement X Argument quality interaction was treated as the distal variable and the Counterargument X Argument quality interaction was treated as a potential mediator, with the latitude of acceptance difference score as the dependent variable. Lower order effects of Involvement (low = -1, high = 1), Argument Quality (weak = -1, strong = 1), and Counterarguments were treated as covariates. Confidence intervals were created to examine whether the population value of each indirect effect differed from zero (i.e., whether the 95% confidence interval for the indirect effects excluded zero).

Consistent with the ANOVA results reported earlier, the Involvement X Argument quality interaction on counterarguments was significant, $b = .14, \ SE = .04, t = 3.39, p < .001, f^2 = .07, 95\% \ CI [.06, .22]$. In addition, counterarguments were significantly related to participants’ latitude difference score, $b = .10.31, \ SE = 4.34, t(190) = 2.37, p = .02, f^2 = .04, 95\% \ CI [1.75, 18.88]$.

We next examined the conditional indirect effects of counterarguments on latitudes. Results showed that the indirect effect of counterarguments on latitudes did not include 0, $b =$
1.23, $SE = .84$, 95% CI [.03, 3.41]. In addition, the direct effect of the Involvement X Argument quality interaction was no longer significant, $b = 4.41$, $t(190) = 1.67$, $p = .10$, 95% CI [-.8, 9.61]. In other words, in the high involvement conditions, argument quality influenced counterargument generation, which then influenced participants’ latitude of acceptance.\(^3\)

**Discussion**

As expected, participants in the high involvement conditions processed the message more than participants in the low involvement conditions, as evidenced by argument quality effects on thoughts and attitudes. Importantly, the involvement manipulation also interacted with argument quality to influence latitudes of acceptance, such that weak arguments led to smaller latitudes of acceptance than strong arguments. We believe that this is the first evidence to demonstrate moderation of argument quality on latitudes of acceptance.

While a promising first step, we believe that it would be ideal to replicate Study 1 with a different measure of latitudes. That is, while useful, the measure relied on the assumption that participants understand the concept of minimum and maximum latitudes and could report those in such a way that biases unrelated to their attitude would not affect their responses e.g., (issues of fairness might make participants report that all participants should take the exam). Therefore, in Study 2 we sought to address this issue and to replicate the effects on latitudes by using a measure based on the method of ordered alternatives (Sherif & Hovland, 1953; Eagly & Telaak, 1972). These changes may minimize some of the biases in the latitudes measure and provide participants with specific instantiations of positions, rather than relying on interpretation of percentages. This also afforded us the opportunity to examine the robustness of the involvement manipulation on a different index of latitude of acceptance.
Finally, understanding the ways in which attitudes operate to create attitude-congruent intentions has long been a motivation for attitude theorists. In Study 2, we take on these challenges by employing methods that will allow us to address these questions. That is, we were also interested in extending the previous findings by measuring participants’ willingness to engage in a behavior related to the proposal (e.g., voting for the proposal). Because involvement and argument quality have interacted to affect attitudes and willingness measures in the past (Briñol & Petty, 2006), we expected to see similar effect on the willingness measure.

**Study 2**

**Method**

**Participants and design.** One hundred seventy-six students recruited from a social sciences participant pool from a Midwestern university (105 male; $M_{age} = 19.59$, $SD_{age} = 1.4$) were randomly assigned to in a 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) between-participants design.

**Procedure.** The procedure was identical to that employed in Study 1 in all respects except three. First, to minimize the effect of participants reporting their attitudes multiple times before completing the latitude measure, we assessed overall attitudes by a single favorability measure. Second, participants reported their latitude of acceptance on a 7-item attitude scale (rather than the percentage-based measure in Study 1). Finally, after reporting their thoughts and attitudes, participants reported their intentions toward supporting the exam proposal and latitudes. Afterwards, participants completed a funnel debriefing and were then excused.

**Independent variables.** The Involvement and Argument quality manipulations were the same as those used in Study 1.

**Dependent variables.**
**Attitudes.** Participants reported their favorability toward comprehensive final exams on a 9-point scale (1 = unfavorable, 9 = favorable).

**Thought favorability.** Participants completed the same thought listing task as in Study 1, and the favorability index was calculated the same as in Study 1.

**Latitudes of acceptance.** After reporting their attitudes and thoughts, participants completed the latitude of acceptance measure. Consistent with previous research (e.g., Shaw & Wright, 1967; Sherif et al., 1965) participants were provided with 7 statements that were pretested to vary in their amount of endorsement of the implementation of comprehensive final exams (see Appendix A). Participants’ width of latitude of acceptance was defined as the number of statements selected (e.g., Eagly & Telaak, 1972; Krosnick et al., 1993). Participants were asked to select the items that they found most acceptable. The items were presented on the screen in the order of acceptability based on pretesting. The items were coded on a 7-point scale, with 1 assigned to the most anti-exam sentiment (“Comprehensive exams are absolutely never justified”) and 7 assigned to the item with the most pro-exam sentiment based on pretesting (“Universities cannot be considered legitimate unless they implement comprehensive exams”).

**Behavioral intentions.** Participants were then asked to imagine that the university proposed a bill to implement the exam policy and rate the extent they agree with the following actions: voting “no” for the bill (reverse coded), and voting to support the bill on 9-point scales (1 = strongly disagree; 9 = strongly agree; see Tormala & Petty, 2002 for a similar measure). Scores were highly correlated ($r = .84, p < .001$) therefore we combined the two items to create a single index of behavioral intentions, with higher scores indicating intentions toward voting in favor of the proposal.

**Results**
Attitudes toward the proposal. A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) ANOVA revealed the predicted interaction $F(1, 172) = 4.82, p = .03, \eta^2_p = .03$ (see Table 4), such that strong arguments were more persuasive than weak arguments in the high involvement conditions $t(83) = 2.37, p = .02$. However, argument quality did not affect attitudes in the low involvement conditions $t(89) = .77, p = .46$. Thus, consistent with Study 1, information processing was higher in the high rather than low involvement conditions.

Thought favorability. A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) ANOVA revealed the predicted interaction $F(1, 172) = 3.92, p = .05, \eta^2 = .02$. That is, strong arguments elicited more favorable thoughts (i.e., fewer counterarguments) than weak arguments in the high involvement conditions $t(83) = -1.67, p = .1$. However, argument quality did not influence cognitive responses in the low involvement conditions $t(89) = -1.08, p = .28$.

Latitude of acceptance width. It was expected that participants’ latitudes of acceptance would be affected by the argument quality manipulation, but only in the high involvement conditions. Specifically, participants in the weak argument condition would report a smaller latitude of acceptance than participants in the strong argument condition under a high involvement manipulation. To test this, we simply added the number of statements participants reported they agreed with. Larger numbers indicate a wider latitude of acceptance.

A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) between-participants ANOVA revealed the predicted interaction $F(1, 172) = 5.94, p = .02, \eta^2_p = .03$ (see Table 4). That is, in the high involvement conditions, latitude width was smaller in the weak than strong argument $t(83) = -2.29, p = .03$. However, the effect of argument quality on latitude width in the low involvement conditions was not significant $t(89) = 1.15, p = .25^4$. 
Behavioral intentions. A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) ANOVA revealed that the results were largely consistent with the attitude and thought measure $F(1, 172) = 3.4, p = .07, \eta^2 = .02$. That is, strong arguments elicited greater intentions favoring the proposal than weak arguments in the high involvement conditions $t(83) = 11.57, p = .2$. However, argument quality did not influence intentions in the low involvement conditions $t(89) = 1.0, p = .32$.

Mediational Analyses

Thought mediation of Involvement x Argument quality interaction on latitudes.
Similar to Study 1, we expected that counterarguments would account for involvement moderating the effect of argument quality on participants’ latitudes of acceptance (captured by the Involvement X Argument quality term). We conducted a mediational analysis using the same bootstrapping procedures and coding outlined in Study 1 to examine the indirect effect and the associated 95% confidence interval of counterarguments on attitudes.

Results showed that indirect effect of counterarguments on latitudes did not include 0, $b = .05, SE = .03, 95\% CI [.01, .012]$. In addition, the direct effect of the Involvement X Argument quality interaction was no longer significant, $b = .16, t(171) = 1.91, p = .06, 95\% CI [-.01, .32]$. Consistent with Study 1, in the high involvement conditions, argument quality influenced counterargument generation, which then influenced participants’ latitudes of acceptance.

Latitude mediation of Involvement x Argument quality interaction on intentions.
Because latitudes of acceptance are associated with attitudes, we also expected that latitudes would account for involvement moderating effects of argument quality on participants’ intentions.
The indirect effect of counterarguments on latitudes did not include 0, \( b = .16, \ SE = .08, 95\% \ CI [.04, .34] \). In addition, the direct effect of the Involvement X Argument quality interaction was no longer significant, \( b = .16, \ SE = .16, t(171) = .96, \ p = .34, 95\% \ CI [-.17, .48] \). In other words, in the high involvement conditions, argument quality influenced latitude width, which then influenced participants’ intentions.

**Overall path predicting intentions.** As noted earlier, the Involvement X Argument quality interaction affected attitudes, thoughts, latitudes, and intentions. Because thoughts mediated the effect of the Involvement X Argument quality interaction on latitudes, and latitudes mediated the effect the interaction on intentions, it may be that thoughts and latitudes represent sequential points in the causal progression from Involvement X Argument quality \( \rightarrow \) thoughts \( \rightarrow \) latitudes \( \rightarrow \) intentions. To test this, we conducted a multiple step mediation model using the PROCESS macro for SPSS.

The bootstrapping analyses randomly drew cases from the sample data (with replacement) and created 5000 bootstrap data sets of equal size to the original sample. Each data set supplied an estimate of the indirect (mediational) effect of thoughts and latitude width as potential mediators (separately and with thoughts as the first mediator, \( M_1 \), and latitudes as the second mediator, \( M_2 \)). The 95\% confidence interval on the indirect effects suggested that the indirect path through thoughts and latitudes mediated the effect of the Involvement x Argument quality interaction on voting intentions, \( b = .02, \ SE = .01, 95\% \ CI [.01 to .06] \). With the mediators in the model, the direct effect of the value accessibility manipulation was no longer significant, \( b = .04, \ SE = .14, t = .28, \ p = .29, 95\% \ CI [-.23 to .31] \). The mediation suggests that under conditions of high involvement, strong arguments were associated with more favorable
thoughts and a larger latitude of acceptance, which then led to increased intentions to vote in favor of the exam proposal.

**Study 3**

Using a different measure of latitude of acceptance, Study 2 provided a conceptual replication of Study 1, such that participants’ latitude of acceptance was greater when exposed to strong rather than weak arguments when involvement was high, but not when involvement was low. In Study 3 we sought to address some possible limitations from the first two studies and to advance the original findings. First, rather than the percentage-based manipulation of involvement, we adopted a more common involvement manipulation. Second, we used a measure of latitudes based on Likert scaling rather than one that relies on percentages (Study 1) or qualitatively different statements (Study 2) to conceptually replicate the effects from earlier studies.

**Method**

**Participants and design.** Ninety-three students recruited from a psychology participant pool at a Western university (59 male; $M_{age} = 20.12$, $SD_{age} = 3.6$) were randomly assigned to a 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) between-participants design.

**Procedure.** We used the same cover study as in Studies 1 and 2, with two exceptions. First, participants were exposed to a different involvement manipulation, such that they were told that the exam policy would occur at either their university (i.e., high relevance) or a distant university (i.e., low relevance). Second, following the attitude and thought measure, participants completed reported their latitudes of acceptance adapted from Krosnick et al. (1993).

**Independent variables.**
**Involvement.** Participants in the high relevance conditions were told that the policy would take effect at their university the following year (see Petty & Cacioppo, 1986, for a similar manipulation of involvement)

**Argument quality.** Participants read the same strong and weak arguments as in Studies 1 and 2.

**Dependent variables.**

**Attitudes.** After reading the message, participants reported their attitudes toward comprehensive final exams on six semantic differential scales (1 = harmful, bad, foolish, unfavorable, and do not approve, 9 = beneficial, good, wise, favorable, and very much approve, respectively), as well as a scale rating how strongly they agreed with the message (1 = strongly disagree, 9 = strongly agree). A composite measure was created by averaging the six items (α = .96).

**Thought favorability.** Following the attitude measure, participants completed the thought listing task from Studies 1 and 2. The thought favorability index was calculated the same as in Studies 1 and 2.

**Latitudes of acceptance.** Following the attitude measure, participants completed the latitude of acceptance item, such that the stem “Comprehensive exams are” is paired with 9 descriptors that vary in extremity and valence (e.g., Comprehensive exams are extremely positive; see Appendix B). Similar to Krosnick et al. (1993), participants were given all nine statements in order from most positive to most negative and were instructed to select every statement that they find ACCEPTABLE (i.e., statements that they AGREE with) regarding the comprehensive exams.
To calculate the latitude of acceptance, we simply counted the number of items that were selected as acceptable.

**Results**

**Attitudes toward the proposal.** A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) between-participants Analysis of Variance (ANOVA) revealed a main effect of Argument quality $F(1, 89) = 9.26, p = .003, \eta_p^2 = .09$, with strong arguments leading to more favorable attitudes than weak arguments (see Table 5). The predicted interaction was also significant $F(1, 89) = 7.14, p = .009, \eta_p^2 = .07$. That is, strong arguments were more persuasive than weak arguments in the high involvement conditions $t(44) = 4.06, p < .001$. However, the effect of argument quality in the low involvement conditions was not significant $t(47) = .27, p = .79$.

**Thought favorability.** A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) ANOVA revealed the predicted interaction $F(1, 89) = 4.47 p = .04, \eta_p^2 = .05$ (see Table 5). That is, strong arguments elicited more favorable thoughts than weak arguments in the high involvement conditions $t(44) = 3.02, p = .04$. However, the argument quality effect was not significant in the low involvement conditions, $t(47) = .21, p = .84$.

**Latitudes of acceptance.** A 2 (Involvement: low vs. high) x 2 (Argument quality: weak vs. strong) ANOVA on the latitude of acceptance measure revealed a main effect of Argument quality $F(1, 89) = 11.86, p = .001, \eta_p^2 = .12$, with strong arguments leading to a larger latitude of acceptance than weak arguments (see Table 5). The predicted Involvement X Argument quality interaction was also significant $F(1, 89) = 4.79, p = .03, \eta_p^2 = .05$. That is, in the high involvement conditions, participants’ latitude of acceptance was greater when exposed to strong than weak arguments $t(44) = 3.81, p < .001$. However, the effect of argument quality in the low
involvement conditions was not significant $t(47) = .93, p = .36$. This suggests that exposure to strong arguments led to larger latitudes of acceptance than weak arguments in the high but not the low involvement conditions.

**Thought mediation of involvement x argument quality effect on latitudes.** Similar to Studies 1 and 2, we expected that counterarguments would mediate the effect of argument quality on latitudes in the high relevance conditions. To test this hypothesis, we conducted similar analysis as in Studies 1 and 2 using the PROCESS macro for SPSS (Hayes, 2013).

Results showed that the indirect effect of counterarguments on latitudes did not include 0, $b = .21, SE = .1, 95\% CI [.03, .42]$. In addition, the direct effect of the Involvement X Argument quality interaction was no longer significant, $b = .08, SE = .07, t(89) = 1.12, p = .27, 95\% CI [-.06, 21]$. In other words, in the high involvement conditions, argument quality influenced counterargument generation, which then influenced participants’ latitude of acceptance.

**Latitude mediation of involvement x argument quality effect on attitudes.**

We also examined, similar to Studies 1 & 2, whether participants’ latitudes of acceptance mediated the effect of the Involvement X Argument quality effect on attitudes. Using the same procedures as in previous analyses, the indirect effect of participants’ latitudes of acceptance on attitudes did not include 0, $b = .71, SE = .33, 95\% CI [.09, 1.36]$. In addition, the direct effect of the Involvement X Argument quality interaction was no longer significant, $b = .19, SE = .13, t(88) = 1.49, p = .14, 95\% CI [-.06, .45]$. In other words, in the high involvement conditions, argument quality influenced latitude of acceptance, which then influenced attitudes.
General Discussion

Decades of research and theorizing in persuasion has emphasized the importance of latitudes of acceptance, rejection, and noncommitment as important factors to consider in understanding successful persuasion. Whereas previous research has focused on how involvement affects the maintenance of an individual’s latitude of acceptance, the present research highlights the importance of involvement in the formation of these latitudes.

Whereas social judgment theory would predict increased counterargumentation, decreased persuasion, and smaller latitudes of acceptance in high-involvement conditions, this occurred only in the weak argument conditions. Moreover, social judgment theory does not make specific predictions regarding how differences in information processing resulting from high involvement would decrease participants’ latitude of acceptance, suggesting that the relationship between latitude width and attitude strength may be more complex than initially thought. These results suggest that consideration of message characteristics such as argument quality can aid in the predictive utility of social judgment theory.

From a methodological standpoint, the present studies also help address some issues in previous research. As Petty et al. (1992) point out, when examining how involvement may affect persuasion, previous research has used correlational methods by using measures of involvement (e.g., Siero and Doosje, 1993). Because such measures are based on self-selection, there may be other variables that are confounded with involvement that may be difficult to control (e.g., topic knowledge, attitude certainty, etc.). Similar issues are possible with using different topics to manipulate involvement (as in Park et al., 2007; Rhine & Severance, 1970; see also Carpenter, 2014), such that different topics may differ vary in their involvement through different “life
experiences” (Sherif & Hovland, 1961, p.197). Such experiences would also likely affect topics that people find interesting, thus confounding latitude width and other variables such as topic interest. In the present studies, involvement was manipulated while also keeping the message topic the same across the message conditions to keep message factors and participant factors as equal as possible across levels of involvement.

The present studies suggest that involvement may not only influence participants’ latitudes of acceptance, but may interact with other variables in the persuasion setting (e.g., message content) to influence latitudes of acceptance. By using a topic that is relatively novel and counterattitudinal to examine information processing on latitude width, the present studies help set the stage for future research on how these latitudes will affect subsequent persuasion attempts. For example, one implication is that an advocate for comprehensive exams may have been better off presenting no information at all rather than weak information because weak information may help inoculate against future persuasive attacks (McGuire, 1964).

In addition, future work should examine possible differential strength-related consequences that may arise from information processing precursors of latitude width when the latitudes are similar in size. Current dual- and multi-process models posit that attitudes, while similar in favorability, formed under high-involvement conditions are more durable than those formed under low-involvement conditions (Krosnick & Petty, 1995). This may also hold true for latitudes of acceptance as well. Thus, one could view latitudes as attitudinal properties and that their durability varies as a function of information processing (i.e., elaboration). Across both studies reported here, latitudes of acceptance for strong arguments did not differ as a function of involvement. If strong and weak arguments were processed similarly in the high involvement conditions, latitudes formed under high elaboration (much like attitudes), should be more durable
Future work should also examine how information processing can affect the strength-related properties of latitudes. Decades of research have examined the role of elaboration in creating strong attitudes, with attitudes formed under high elaboration conditions tend more certain (Tormala & Petty, 2002), less ambivalent (Clark, Wegener, Fabrigar, & 2008), etc. (see Petty & Krosnick, 1995, for a review). It may be that latitudes may also vary in similar properties as a function of elaboration. Using latitudes of acceptance as an example, latitudes based on more effortful, elaborative processing may be held with greater certainty (or be associated with various strength related variables), and thus be more resistant to change.

One implication of the current research is that not all attitudes formed under high-involvement conditions will have a narrow latitude of acceptance (and therefore a larger latitude of rejection), as initially outlined by social judgment theory. That is, when paired with strong compelling information under high-involvement conditions, latitudes of acceptance remained a similar size as those under low-involvement conditions. Despite this similarity, it is likely that the structural and meta-cognitive content between low- and high-involvement attitudes may differ (Petty, Briñol, Tormala, & Wegener, 2007). Therefore, a direction for future work would be to examine how, from a metacognitive perspective, perceiving success in resistance can lead to changes in latitude width. Recent research has demonstrated that following an attack, resistance to the attacking message occurring under high elaboration was similar to resistance in low elaboration conditions, but the amount of certainty one held their attitude was less than in high elaboration conditions (Tormala & Petty, 2002). It may be that latitude width is subject to the same effects, such that while resistance is similar across high and low elaboration conditions,
latitude acceptance width is smaller in high-elaboration conditions. In other words, similar amounts of resistance may occur across levels of elaboration, but latitudes may differ in their width. Such a possibility may add an important qualification when considering latitude width as a measure of attitude strength.

The current studies expand on previous research and theorizing by demonstrating that the latitude development is affected by information processing as well as information quality. Despite these promising initial steps, a number of questions remain. For example, in the current studies we focused on latitudes of acceptance alone could be affected by involvement and argument quality. Because the topic was counteratitudinal and the three latitudes are hypothesized to not overlap, we chose to focus on latitudes of acceptance rather than the other two latitudes in order to examine how argument quality and involvement combine to affect latitudes of acceptance for a counteratitudinal topic. Future research should examine how initial attitudes formed as a function of information processing differ in all three latitudes.

Understanding how the array of beliefs that substantiate an attitude fit together or represent different facets of an attitude can allow for a deeper understanding of how persuasion techniques may work. One does not have to look far to find heated debates that demonstrate that it is unlikely that anyone’s attitude will be completely reversed after a single exposure to a message. On the other hand, in recent years attitudes towards some topics have drastically shifted across the larger population (e.g., attitudes towards same-sex marriage). It is through exposure to persuasive messages that attitudes may slowly begin to shift not by repositioning an attitude as a whole, but rather by broadening the latitudes of acceptance leading attitudes begin to slowly move toward a new position. A persuasive message that is within our latitude of acceptance may also be a message that we are willing to consider rather than immediately launching a series of
counterargument. Indeed, understanding the ways in which attitudes shift can go a long way to understanding the ways in which behavioral change might be realized.
References


**Table 1.** Pretest Means, Standard Deviations, and Correlations between Participants’ Attitudes toward Comprehensive Final Exams, Acceptable, Minimum, and Maximum Percentages.

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attitude</td>
<td>3.85</td>
<td>1.79</td>
<td>.56*</td>
<td>.65*</td>
<td>.26*</td>
<td>.6*</td>
</tr>
<tr>
<td>2. Acceptable %</td>
<td>45.39</td>
<td>35.65</td>
<td>--</td>
<td>.83</td>
<td>.7*</td>
<td>.38*</td>
</tr>
<tr>
<td>3. Maximum %</td>
<td>55.0</td>
<td>38.58</td>
<td>--</td>
<td>.66*</td>
<td>.65*</td>
<td></td>
</tr>
<tr>
<td>4. Minimum %</td>
<td>25.0</td>
<td>29.51</td>
<td>--</td>
<td></td>
<td>-.14</td>
<td></td>
</tr>
<tr>
<td>5. Latitude width</td>
<td>30.0</td>
<td>29.27</td>
<td></td>
<td></td>
<td></td>
<td>--</td>
</tr>
</tbody>
</table>

Note. *p < .05. Latitude width = Maximum % - Minimum %. 
Table 2. Study 1 Means, Standard Deviations, and Simple Effects for Attitudes, Thought Favorability, and Acceptable Percentage as a Function of Involvement and Argument Quality.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Involvement</th>
<th>Argument Quality</th>
<th>t</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strong</td>
<td>Weak</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes</td>
<td>High</td>
<td>5.88 (1.66)</td>
<td>4.82 (2.05)</td>
<td>2.72*</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>5.48 (1.94)</td>
<td>5.58 (2.1)</td>
<td>.26</td>
</tr>
<tr>
<td>Thoughts</td>
<td>High</td>
<td>.16 (.6)</td>
<td>-.32 (.65)</td>
<td>3.69*</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>-.18 (.5)</td>
<td>-.09 (.56)</td>
<td>.84</td>
</tr>
<tr>
<td>Acceptable %</td>
<td>High</td>
<td>58.81 (33.13)</td>
<td>37.56 (38.18)</td>
<td>2.86*</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>47.44 (44.8)</td>
<td>46.96 (44.6)</td>
<td>.05</td>
</tr>
</tbody>
</table>

Note. *p < .05. Standard deviations are in parentheses.
Table 3. Study 1 Means, Standard Deviations, and Simple Effects for Percentage-based Boundaries and Latitude Width as a Function of Involvement and Argument Quality.

<table>
<thead>
<tr>
<th>Boundary</th>
<th>Low Involvement</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strong</td>
<td>Weak</td>
<td>t</td>
<td>d</td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>57.22 (43.8)</td>
<td>53.74 (43.08)</td>
<td>.4</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>31.27 (39.59)</td>
<td>28.36 (35.51)</td>
<td>.39</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>25.95 (35.91)</td>
<td>25.38 (40.33)</td>
<td>.08</td>
<td>.02</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>High Involvement</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strong</td>
<td>Weak</td>
<td>t</td>
<td>d</td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>73.84 (32.03)</td>
<td>29.92 (32.96)</td>
<td>6.55*</td>
<td>1.35</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>40.95 (34.39)</td>
<td>19.87 (27.26)</td>
<td>3.33*</td>
<td>.68</td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>32.89 (35.96)</td>
<td>10.05 (30.2)</td>
<td>3.36*</td>
<td>.69</td>
<td></td>
</tr>
</tbody>
</table>

Note. *p < .05. Standard deviations are in parentheses. Width = Maximum % - Minimum %.
Table 4. Study 2 Means, Standard Deviations, and Simple Effects for Attitudes, Thought Favorability, Latitude of Acceptance Width, and Intentions as a Function of Involvement and Argument Quality.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Involvement</th>
<th>Argument Quality</th>
<th>$t$</th>
<th>$d$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Strong</td>
<td>Weak</td>
<td></td>
</tr>
<tr>
<td>Attitudes</td>
<td>High</td>
<td>5.58(2.17)</td>
<td>4.43(2.32)</td>
<td>2.37*</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>4.75(2.26)</td>
<td>5.12(2.41)</td>
<td>.74</td>
</tr>
<tr>
<td>Thoughts</td>
<td>High</td>
<td>.01(.64)</td>
<td>-.23(.73)</td>
<td>-1.67</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>-.16(.57)</td>
<td>-.03(.61)</td>
<td>1.08</td>
</tr>
<tr>
<td>Latitude of Acceptance</td>
<td>High</td>
<td>1.82(1.07)</td>
<td>1.28(1.13)</td>
<td>-2.29*</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>1.52(1.03)</td>
<td>1.79(1.2)</td>
<td>1.15</td>
</tr>
<tr>
<td>Intentions</td>
<td>High</td>
<td>4.86 (2.35)</td>
<td>4.03 (2.45)</td>
<td>-1.57</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>4.32 (1.89)</td>
<td>4.79 (2.54)</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note. *$p < .05$. **$p < .01$. Standard deviations are in parentheses.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Involvement</th>
<th>Argument Quality</th>
<th>t</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strong</td>
<td>Weak</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes</td>
<td>High</td>
<td>6.2 (1.78)</td>
<td>3.85 (2.14)</td>
<td>4.01**</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>4.94 (1.93)</td>
<td>4.79 (2.06)</td>
<td>.27</td>
</tr>
<tr>
<td>Thoughts</td>
<td>High</td>
<td>.26 (.48)</td>
<td>-.18 (.5)</td>
<td>3.02**</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>-.15 (.45)</td>
<td>-.17 (.51)</td>
<td>.21</td>
</tr>
<tr>
<td>Latitude of Acceptance</td>
<td>High</td>
<td>3.43 (.73)</td>
<td>2.5 (.91)</td>
<td>3.77**</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>2.79 (.88)</td>
<td>2.58 (.65)</td>
<td>.93</td>
</tr>
<tr>
<td>Latitude of Rejection</td>
<td>High</td>
<td>2.21 (.95)</td>
<td>3.0 (.87)</td>
<td>-2.87**</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>2.67 (.87)</td>
<td>2.54 (.98)</td>
<td>.47</td>
</tr>
</tbody>
</table>

Note. *p < .05, **p < .01. Standard deviations are in parentheses.
Appendix A

Pretest Means, and Standard Deviations of Comprehensive Exam Statements used in Study 2.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive exams are absolutely never justified.</td>
<td>2.67(2.18)</td>
</tr>
<tr>
<td>Every student should be required to take a comprehensive exam to graduate from college.</td>
<td>5.03(1.8)</td>
</tr>
<tr>
<td>Comprehensive exams should be used more often than they are.</td>
<td>5.45(2.72)</td>
</tr>
<tr>
<td>Comprehensive exams are a necessary requirement, but I wish they were not.</td>
<td>6.11(2.72)</td>
</tr>
<tr>
<td>Comprehensive exams are justified only for students planning on graduate school.</td>
<td>6.45(2.13)</td>
</tr>
<tr>
<td>Universities cannot be considered legitimate unless they implement comprehensive exams.</td>
<td>7.24(2.96)</td>
</tr>
<tr>
<td>We must have comprehensive exams for some college majors.</td>
<td>7.8(2.01)</td>
</tr>
</tbody>
</table>

Note. Standard deviation (SD) in parentheses.
Appendix B

Instructions and Items used for the Latitude of Acceptance measure.

Please select every statement that you find ACCEPTABLE to you (i.e., statements that you AGREE with) regarding the comprehensive exams. You may select as many of the statements that you agree with.

Items:

Comprehensive exams are extremely positive.
Comprehensive exams are very positive
Comprehensive exams are moderately positive.
Comprehensive exams are mildly positive.
Comprehensive exams are neither positive nor negative.
Comprehensive exams are mildly negative.
Comprehensive exams are moderately negative.
Comprehensive exams are very negative
Comprehensive exams are extremely negative.

1Even if the attitude is based on very little information, such as novel topic, message recipients can still form and verbalize an attitude (Park et al., 2007; Petty, Cacioppo, Haugtvedt, 1992; Serio & Doojs, 1993).
2Participants for the subsequent studies reported in the paper were selected from the same institution.
3Consistent with an elaboration likelihood perspective (Petty & Cacioppo, 1986) we expected that participants’ cognitive responses would account for effects of Involvement on amount of information processing (captured by the Involvement X Argument quality term). As expected, counterarguments were significantly related to participants’ attitudes $b = 1.63$, $SE = .21$, $t = 7.84$, $p < .001$, $f^2 = .33$, 95% CI: 1.22, 2.04. In addition, in the high involvement conditions, the indirect effect of counterarguments on latitudes was significantly different from 0 [$b = 1.04$, $SE = .39$, 95% CI: .18, .63]. In the low involvement conditions, however, the indirect effect was not significantly different from 0 [$b = -.07$, $SE = .09$, 95% CI: -.25, .1]. The direct effect of the Involvement X Argument quality interaction was no longer significant [$b = .04$, $t(190) = .35$, $p = .72$, 95% CI: -.21, .3]. In other words, Involvement influenced perceptions of thought favorability, which then increased message processing.

4. Of course, this latitude width measure is one of range. It is possible that latitude width could change while the average agreement (i.e., the central tendency of the scale) remain unchanged. Such a possibility is unlikely as it is inconsistent with the favorability data reported earlier. To further rule out this possibility, one could also use scores on the latitude measure as a measure of attitude based on central tendency. This would help in determining participants central tendency score, rather than range. To do this, we coded items in the latitudes measure from 1-7 (1 being the least favorable and 7 being the most favorable, based in pretesting; see Appendix A). We then summed
the scores and subtracted the latitude width (in order to control for the range of responses) to create an agreement
measure. An Involvement X Argument quality ANOVA on the agreement measure revealed a pattern similar to the
favorability item reported earlier. That is, the Involvement X Argument quality interaction did not reach traditional
significance $F(1, 172) = 2.24, p = .14$, but was in the predicted direction. That is, strong arguments were more
persuasive than weak arguments in the high involvement conditions $t(83) = 2.73, p = .008$. However, the effect of
argument quality on attitudes in the low involvement conditions was not significant $t(89) = .63, p = .53$.

This analysis also revealed a main effect of argument quality $F(1, 89) = 4.47 p = .04, \eta^2 = .06$, with strong
arguments ($M = .26, SD = .48$) eliciting more favorable thoughts than did weak arguments ($M = -.17, SD = .5$) and a
main effect of Involvement $F(1, 89) = 4.22 p = .04, \eta^2 = .05$, with participants in the high involvement conditions
($M = .05, SD = .48$) eliciting more favorable thoughts than in the low involvement conditions ($M = -.18, SD = .5$).