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# Route to persuasion in the Elaboration Likelihood Model: The role of self-esteem

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Route to persuasion in the Elaboration Likelihood Model: The role of self-esteem

By

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*Abstract*

The current study aimed to explore the relationship between the two routes to persuasion proposed in the Elaboration Likelihood Model of persuasion, the central route and the peripheral route, and an individual's self-esteem. It was hypothesized that individuals with low self-esteem would be more likely to follow the peripheral route to persuasion due to a lack of cognitive resources needed to enter the central route, while those high in self-esteem were thought to be more likely to follow the central route. Participants were first asked to fill out a series of three short questionnaires, one of which was the Rosenberg Self-Esteem scale. They were then given 30 seconds to read an advertisement for a showerhead. Participants could have been exposed to one of four ads. . Some of the ads had relatively strong arguments for the showerhead and others had relatively weak arguments.  Also, in some ads the spokesperson was an expert on showerheads, in others, he was a non-expert.  The results revealed that individuals with low self-esteem were more persuaded by the expert than non-expert source and that high self-esteem individuals were more persuaded by the strong rather than the weak arguments.

*Route to persuasion in the Elaboration Likelihood Model: The role of self-esteem*

The Elaboration Likelihood Model, proposed by Richard Petty and John Cacioppo, is one of the most widely accepted theories of persuasion with in the field of psychology today. With in the model, the word elaboration refers to the extent to which an individual processes, thinks about or transforms the arguments within a persuasive communication (Petty & Cacioppo, 1986). This idea is based on a continuum with one end representing substantial processing or pondering of the central points of the issue and the other representing little elaboration or thought surrounding the central points (Petty & Cacioppo, 1986). Likelihood then refers to the fact that an individual's elaboration of a certain communication can either be likely or unlikely, it refers to the probability of an individual to elaborate (Petty & Cacioppo, 1986). Petty and Cacioppo (1986) theorized that there are two distinct ways in which individuals process persuasive communications based on the amount of elaboration, resulting in two different routes to persuasion and attitude change known as the central and peripheral routes. When elaboration is high an individual is more likely to follow the central route to persuasion and when elaboration is low an individual is more likely to follow the peripheral route (Petty & Cacioppo, 1986).

The central route is followed when individuals utilize significant amounts of their cognitive resources in order to evaluate carefully and focus on the central components of the persuasive communication. Within this route, individuals carefully and closely analyze the ideas presented with in the communication and consider the implications of the arguments and how they differ from or are similar to things like their prior knowledge of the topic (Petty & Cacioppo, 1986). The peripheral route, on the contrary, is followed when individuals use very little cognitive resources in their processing of persuasive

communications. Instead of focusing on the central arguments, when in the peripheral route, individuals ponder the message quickly and therefore tend to focus on and use simple rather than complex cues when considering whether they agree with the argument (Petty & Cacioppo, 1986). These peripheral cues include: the physical attractiveness of the communicator; the communicator's perceived level of expertise in the subject area; or even the music playing in the background while the communicator is speaking; basically anything that is not central to the key arguments that the individual uses to make his or her decision of whether to accept the arguments at hand (Petty, Caccioppo, & Goldman, 1981; Petty & Cacioppo, 1986; Petty, Caccioppo, & Schumann, 1983). These cues allow individuals processing within the peripheral route to employ heuristics, or simple decision making rules such as "experts are to be believed", in order to make their decision allowing them to use very little to no cognitive resources (Petty & Cacioppo, 1986).

There are many factors that can influence or determine which route to persuasion an individual follows. A person's motivation to process the information at hand or the arguments that are being presented is one key factor in determining their possible route to persuasion. This is because when an individual is motivated to process a certain set of arguments they tend to consider and approach the persuasive communication more seriously and therefore they begin to process the arguments at hand centrally (Petty, Cacioppo, & Goldman, 1981; Petty & Cacioppo, 1984). A lack of motivation to process the arguments at hand leads one to focus less on the central message therefore causing them to enter the peripheral route in which they begin to process the persuasive communication for its superficial content rather than for its central meaning (Petty,

Cacioppo, & Goldman, 1981; Petty & Cacioppo, 1984). A person's level of involvement with the topic on which the persuasive communication is focused is a major determinant of their motivation to process and therefore which route they will follow as well (Petty, Cacioppo, & Goldman, 1981; Petty & Cacioppo, 1984). When individuals are high in involvement they are much more likely to carefully interpret and focus on the central arguments because the issue is of high personal consequence (Petty, Cacioppo, & Goldman, 1981). However, when individuals are low in involvement, the issue is of low personal consequence and therefore they will not benefit from fully understanding the arguments, causing them to look for mental short cuts to aid in the decision making process rather than expending valuable cognitive resources (Petty, Cacioppo, & Goldman, 1981).

Petty, Cacioppo, and Goldman (1981) first demonstrated these ideas in their classic study involving student feedback on the proposed notion that seniors take a comprehensive final exam prior to graduation. The students were randomly assigned to either high or low involvement, within in the high involvement condition students were told the policy would be implemented the next year, and in low involvement they were told the policy would be implemented within the next ten years. Participants listened to a message with either strong or weak arguments delivered by a communicator either high or low in expertise (Princeton Professor vs. high school class). They found that within the high involvement group, the strength of the arguments was the most important factor in determining attitude change (Petty, Cacioppo, & Goldman, 1981). Regardless of whether the communicator was high or low in expertise, the strong arguments lead to more attitude change than the weak arguments, demonstrating that people who are high in

involvement engage in issue relevant thinking (Petty, Cacioppo, & Goldman, 1981). The opposite was found among the low in involvement group. As a group, these students tended to rely on simple peripheral cues, in this case the level of the communicator's expertise, making the strength of the arguments presented irrelevant in terms of procured attitude change (Petty, Cacioppo, & Goldman, 1981). Petty and Cacioppo (1984) also found that when individuals are processing within the peripheral route and would rather not expend cognitive resources on understanding the arguments, the mere number of arguments presented is used as a determinant of the quality of the communication (Petty & Cacioppo, 1984). Those in the low involvement group were more convinced by a persuasive message that had nine total arguments even if all of them were weak (Petty & Cacioppo, 1984). Where as in the high involvement group, participants were more likely to see through the sheer number of arguments and accept the message only if the arguments were strong, as they were centrally processing the information (Petty & Cacioppo, 1984).

Need for cognition is also an important motivational factor in determining the route a person might follow. A person's need for cognition is defined as their need to employ thinking in order to understand the world; a person can either be high or low in need for cognition (Cacioppo & Petty, 1982). An individual that is particularly high in need for cognition usually prefers more complex problems to simple ones and enjoys thinking of innovative ways to solve difficult tasks (Cacioppo & Petty, 1982; Petty, Cacioppo, Strathman, & Priester, 1994). These people are therefore far more likely to prefer and follow the central route rather than the peripheral route since their need for cognition motivates them to do so. Those who are low in need for cognition act in the

opposite way and they therefore lack the motivation to process information centrally and prefer to follow the peripheral route (Cacioppo & Petty, 1982; Petty, Cacioppo, Strathman, & Priester, 1994). Furthermore, Cacioppo, Petty and Morris (1983) conducted two similar experiments regarding the relationship between need for cognition, message processing and persuasion. Through their first experiment, Cacioppo et al. (1983) demonstrated that argument quality had a greater influence on the message evaluations and source impressions of individuals high in need for cognition than on those low in need for cognition and that those high in need for cognition were able to recall more of the message arguments (regardless of the argument quality) and reported expending more cognitive effort than individuals low in need for cognition. In a subsequent study, Cacioppo et al. (1983) demonstrated that the attitudes of those high in need for cognition were more affected by argument quality than those of the individuals low in need for cognition.

It is also important to consider an individual's actual ability to process a persuasive communication at the time it is presented. This is because to actually enter the central route one needs not only motivation but also the actually ability to do so. Certain situations can enhance an individual's ability to process a message, most likely causing them to follow the central route, while others can hinder their ability, such as when an individual is distracted, in which case they would be far more likely to follow the peripheral route due to a lack of cognitive resources (Perloff, 2008). Harkins and Petty (1981) were able to demonstrate the impact of distraction on persuasion in their study that asked participants to view either one source presenting three arguments, three sources presenting different versions of a single argument, or three sources presenting three

different arguments in favor of a counterattitudinal position either accompanied by or not

accompanied by a distractor task. The results demonstrated that in the presence of a

distractor task the previous persuasive advantage of the three source/three arguments

condition had been lost (Harkins & Petty, 1981).  More specifically, our actual cognitive

ability also greatly impacts the way in which we process information. As Wood, Rhodes,

and Biek (1995) demonstrated, when an individual has an increased level of knowledge

or cognitive ability in a certain area, he or she is better able to evaluate the overall quality

of arguments concerning that subject area as strong or weak.

An interesting ability variable that has been explored for its relation to persuasion

and the conditions under which a person may or may not be persuaded is anxiety.

Numerous studies have demonstrated that when under high anxiety individuals tend to

perform poorly on tasks that demand cognitive resources. Eysneck (1979, 1982)

demonstrated that when people are in states of high anxiety their cognitive resources for

other tasks are depleted because they are spent on activities such as worrying (in

Sengupta & Johar, 2001). Anxiety has been shown to have debilitating effects on

individuals' performances on many different types of tasks such as recall tasks (Hodges

& Spielberger, 1969), anagram solving (Deffenbacher, 1978), mathematical problem

solving (Hamilton, 1975), and inferential reasoning (Darke, 1988). One significant

finding that was consistent throughout all of the previously listed studies was that

individuals' performance in terms of speed or accuracy suffered when an individual was

in a state of high anxiety (Sengupta & Johar, 2001).  In their study, Sengupta and Johar

(2001) focused on the effects that anxiety has on a person's ability to fully comprehend

and elaborate on a message. Their findings replicated previous results and documented

the debilitating effects of anxiety to the domain of message comprehension and elaboration (Sengupta & Johar, 2001). When the message presented to participants was unrelated to the source of anxiety, high anxiety participants elaborated less than the low anxiety individuals and exhibited a decreased performance on claim recognition (Sengupta & Johar, 2001). However, the opposite results were demonstrated when the message given was related to the source of anxiety. In this case high-anxiety individuals demonstrated increased message elaboration and comprehension. These levels were similar to those of the low-anxiety individuals in the trials when the message was not related to the anxiety source.

Similarly, DeBono and McDermott (1994) explored the effects of trait anxiety on persuasion. Participants high and low in trait anxiety, determined by The State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970), were told they would be asked to evaluate certain parts of a magazine advertisement for a new perfume (DeBono & McDermott, 1994). The participants were first shown a slide of the spokesperson-model used in the advertisement, either a relatively attractive or unattractive woman, and then the copy used in the ad, which contained either three relatively strong or weak arguments (DeBono & McDermott, 1994). They were shown the face of the woman for 10s and the copy for 15s (DeBono & McDermott, 1994). Participants were then asked to rate the product in several different ways, first they were asked to fill out five 7-point semantic differential items (good-bad, valuable-worthless), there were also several filler questions that were consistent with the cover story incorporated into the questionnaires (DeBono & McDermott, 1994). They also completed two manipulation checks, in which participants were asked to rate the attractiveness of the spokesperson and the quality of

the advertisement's copy, both on a 7-point Likert-type scale (DeBono & McDermott, 1994). DeBono and McDermott (1994) found that regardless of the quality of the arguments, individuals with high trait anxiety were persuaded by the attractiveness of the source and individuals with low trait anxiety were persuaded by the quality of the arguments regardless of the attractiveness of the source.

Anxiety is highly related to the very important psychological concept of self-esteem. Coopersmith (1967) originally spoke of the concept of self-esteem as an evaluation of approval or disapproval that an individual makes and usually maintains with regard to him or herself. He said that self-esteem is a personal judgment of our own worthiness, which is often determined by the extent to which we regard ourselves as significant, successful, and capable (Coopersmith, 1967). Coopersmith (1967) conducted an eight-year study that explored self-esteem and other personality characteristics within a normal sample of middle-class urban boys who he followed from age ten to adulthood. He found that the boys who were deemed to have high self-esteem were very active and expressive individuals that were both academically and socially successful (Coopersmith, 1967). They seemed to be leaders rather than followers, were very interested in public affairs, were not highly sensitive to criticism and were little troubled by feelings of anxiety (Coopersmith, 1967). They also seemed to be extremely self-confident in the sense they trusted their own thoughts and reactions and had confidence that they would be well received (Coopersmith, 1967). Similarly, they did not appear to be particularly self-conscious or preoccupied with personal difficulties such as insomnia, fatigue or headaches, these were found to be common among individuals with low self-esteem (Coopersmith, 1967). Coopersmith (1967) found that the boys with low self-esteem felt

discouraged, unlovable, isolated, and overall seemed to be depressed (Coopersmith, 1967). He found that they were unable to express or defend themselves and were not strong enough to overcome their deficiencies, as they were fearful of failing or upsetting others (Coopersmith, 1967).

Rosenberg (1962) explored the relationship between self-esteem and anxiety. He administered three different questionnaires to 5,077 students and measured their self-esteem with a 10-item Guttman scale and their level of anxiety by reports of psychosomatic symptoms (Rosenberg, 1962). He found that there was a clear inverse relationship between an individual's level of anxiety and their level of self-esteem (Rosenberg, 1962). Those with lower self-esteem had higher levels of anxiety and those with higher self-esteem had lower levels of anxiety (Rosenberg, 1962). Greenberg, Solomon, Pyszczynski, Rosenblatt, Burling, Lyon, Simon, and Pinel (1992) were also able to demonstrate a connection between self-esteem and anxiety in their studies, which explored the idea that self-esteem serves some kind of an anxiety-buffering function. In the first of their three studies, Greenberg et al. (1992) were able to demonstrate that raising self-esteem reduced anxiety in response to threat by providing participants with either positive or neutral feedback in regard to a made-up personality test and then showing them a video containing either vivid images of death or neutral images. While the video containing vivid images of death significantly raised levels of anxiety in participants provided with neutral feedback, the participants who's self-esteem levels were experimentally enhanced experienced no increase in anxiety level whatsoever (Greenberg, et al., 1992). Their subsequent studies were designed to assess the generality of the anxiety-buffering effects of self-esteem found in study 1 to other types of threats.

This time, anxiety levels were measured in response to the threat of a painful electric shock in participants who's self-esteem had been either experimentally enhanced or not. The enhanced self-esteem participants experienced less of an increase in anxiety in response to the threat of an electric shock than did control participants (Greenberg, et al., 1992). Therefore, Greenberg et al. (1992) were able to demonstrate that self-esteem provides a buffer against anxiety not only to events directly associated with death but to other threatening events as well.

Given the fact that an individual must have enough cognitive resources available in order to follow the central route to persuasion and to be able to process the arguments for their meaning, when an individual lacks such cognitive resources, they tend to follow the peripheral route to persuasion (Petty & Cacioppo, 1986). In this route the individual tends to focus on outside cues and often employs heuristics or simple decision-making models (Petty & Cacioppo, 1986). Given the research that demonstrates anxiety limits a person's cognitive resources, it makes sense that individuals with high levels of anxiety are more commonly persuaded by peripheral cues such as the source's level of attractiveness while individuals with low levels of anxiety are more commonly persuaded by the strength and quality of the arguments (DeBono & McDermott, 1994). It is also true, as was demonstrated by Rosenberg (1962) and Greenberg et al. (1992), that anxiety levels and self-esteem are inversely correlated in the sense that individuals with high self-esteem typically have lower anxiety and individuals with low self-esteem typically have higher anxiety as well as the fact that self-esteem can act as an anxiety-buffer. Therefore, it was predicted that individuals with high self-esteem would be more likely to follow the

central route to persuasion while those with low self-esteem would be more likely to

follow the peripheral route.

The current study aimed to explore the relationship between the two routes to

persuasion within the elaboration likelihood model and level of self-esteem by exposing

high and low self-esteem individuals to advertisements containing either strong or weak

arguments and an expert or a non-expert source. Participants were first asked to read one

of four advertisements and to then rate it on a post-advertisement questionnaire.  It was

hypothesized that because individuals with low self-esteem typically have high levels

anxiety that take up valuable cognitive resources, they will be more likely to follow the

peripheral route to persuasion. The reverse was also hypothesized, individuals with high

self-esteem and therefore low levels of anxiety will have more cognitive resources

available at any given time, making them more likely to follow the central route to

persuasion. Therefore, it was predicted that the individuals with high self-esteem would

be more persuaded by the advertisements containing the strong rather than the weak

arguments regardless of the type of source and that those with low self-esteem would be

more persuaded by the advertisements containing the expert rather than the non-expert

source regardless of the strength of the arguments.

**Method**

*Participants*
160 Union College undergraduate students completed the study for a cash

payment of $4.00 or for a half hour of out of class activity credit required in either their

Introduction to Psychology or Research Methods course. One participant failed to

complete the Rosenberg Self-Esteem Scale and therefore his or her data was excluded.

Participants were run in groups of 1-12. There were 40 males and 119 females and the

participants ranged in age from 17 to 24 with an average age of 20. Eighty students were

classified as having low self-esteem (scoring 23 or lower on the Rosenberg Self-Esteem

Scale) and seventy-nine as having high self-esteem (scoring 24 or higher) by way of a

median split.

*Procedure/ Materials*

Prior to the experiment the arguments used in the advertisements were pre-tested

to measure their respected strength or weakness. Twenty students were asked to fill out

the Rosenberg Self-Esteem Scale (see Appendix A) and were asked to rate 10 different

arguments for a showerhead based on a 7-point Likert scale ranging from 1 (very weak)

to 7 (very strong) with 4 acting as a neutral point. First a Pearson correlation was

preformed between self-esteem score and the score of the strength of each advertisement

to ensure that self-esteem score was not correlated to measured argument strength or

weakness. In the case of all ten arguments pretested, all correlations between the score

given to the argument and self-esteem level were found to be insignificant, r (20) = -.096,

p > .05. The scores of all participants were averaged together and the top 3 strongest and

top 3 weakest arguments were identified. Through a paired samples t-test it was

determined that the arguments identified as the strongest (M=17.40, s=2.28) and the

weakest (M=13.0, s=2.53) were significantly different in terms of their respective

strength or weakness, *t* (19) = 5.964, *p*=.000, and they were used in the final

advertisements (see Appendix B).

In the main study, participants were first asked to read and fill out an informed

consent form, which minimally described the purpose of the study. The experimenter

explained that she was interested in learning more about the way that individuals respond

to different types of advertisements. She explained to the participants that they would

first be asked to complete three short questionnaires and to then read an advertisement

and complete a questionnaire about their opinions concerning the advertisement. The

researcher collected the consent form and handed out the packets. The participants were

told that they could begin filling out the three short questionnaires and were asked to stop

when they reached a blank page in the packet. The first questionnaire asked for basic

personal information such as participants' age, gender, and major. Following the basic

information questionnaire, participants were asked to complete the 18-item "Personal

Reaction Survey" and the 10-item Rosenberg Self-Esteem scale. The Personal Reaction

Survey was included to cover up the true purpose of the study as to avoid demand

characteristics.

  After completing the self-esteem scale, participants came to a blank page in the

packet at which they were asked to stop and wait until each participant reached the same

point. Once each participant in the group reached the blank page, the participants were

told they would have 30s to read the advertisement on the next page and that they would

be asked for their opinions on the advertisement on the next page. They were told that if

they finished reading before the 30s was over they were welcome to go on but that they

could not refer back to the advertisement in order to answer the questions on the final

questionnaire. The final questionnaire contained a series of follow up questions regarding

the advertisement the participants had just viewed. Participants were asked to answer the

10 questions based on a 5 point Likert Scale ranging from 1 (very little) to 5 (very much)

with 3 acting as a neutral opinion point (see Appendix C). Participants were exposed to

one of four possible advertisements. Each advertisement contained either relatively

strong or relatively weak arguments and an export or a non-expert source. When participants were finished they were told to remain seated and the researcher collected their packets from them. They were then read a debriefing statement that explained the true purpose of the experiment. Participants were then thanked for their participation and were asked to please refrain from discussing the study with any future participants. At this time the participants who completed the study for cash were paid $4.00 and those who completed it for credit were given an out of class activity sheet to fill out.

### Results

A scale reliability check was performed on the 10 questions from the post advertisement questionnaire and revealed a Cronbach's Alpha equal to .895. Due to the fact that the items were internally consistent it could be assumed that they were all measuring the same thing, therefore, the participants' answers to all ten questions were collapsed into a single measure representing their total overall evaluation of the advertisement (see Table 1 for mean evaluation scores).

The self-esteem scores of participants were then coded as high or low ($\geq 24 =$ high, $\leq 23 =$ low) based on a median split. A 2 (self-esteem level: high or low) x2 (ad strength: strong or weak) x2 (ad source: expert or non-expert) between subjects ANOVA was performed on the overall advertisement evaluation scores. The results revealed a main effect of argument strength, $F (1, 151) = 20.75$, $p = .000$, indicating that in general the participants responded more favorably to the strong rather than the weak arguments. The main effect of advertisement source was also found to be significant, $F (1,151) = 5.088$, $p = .026$, indicating that in general the participants responded more favorably to the expert than to the non-expert. The results also revealed a main effect of self-esteem

level, $F(1.151) = 8.65$, $p = .004$, indicating that in general the individuals with high self-esteem responded more favorably to the advertisements than the individuals with low self-esteem.

In addition, a significant interaction was found between argument strength and level of self-esteem, $F(1.151) = 4.12$, $p < .05$, meaning that as expected individuals with high self-esteem preferred the strong arguments (34.79) to the weak arguments (32.46) more so than individuals with low self-esteem did (mean evaluations: strong: 29.64, weak: 27.21). Also moving in the direction of the proposed hypotheses, the argument strength x ad source interaction was found to be insignificant, $F(1, 151) = .047$, $p > .05$. In addition, the ad source x self-esteem level interaction was found to be insignificant $F(1,151) = .403$, $p > .05$. The three way interaction of ad source x argument strength x self-esteem level was also found to be insignificant, $F(1,151) = .748$, $p > .05$.

Although the three-way interaction was not significant, the means were moving in the predicted direction. As an exploratory analysis, the data for high and low self-esteem individuals were analyzed separately.

*High Self-Esteem*

A 2 (ad strength: strong or weak) x 2(ad source: expert or non-expert) between subjects analysis of variance (ANOVA) was performed on the overall advertisement evaluation scores of participants and revealed the main effect of argument strength was significant, $F(1, 76)=22.29$, $p=.000$, meaning that as predicted the participants responded more favorably to the strong rather than the weak arguments. Neither the main effect of advertisement source or the ad strength x ad source interaction were significant, $F(1, 76)= 1.35$, $p > .05$, and $F(1, 76) = .602$, $p > .05$, respectively (see Figure 1).

*Low Self-Esteem*

It was predicted that for those with low self-esteem, the advertisement source would be more important in terms of determining their level of persuasion than the argument strength. A 2 (ad strength: strong or weak) x 2(ad source: expert or non-expert) between subjects analysis of variance (ANOVA) was performed on the overall advertisement evaluation scores and revealed that the main effect of ad source was significant, $F$ (1,75)= 4.06, $p < .05$. Meaning that as predicted, the participants responded more favorably to the advertisements that contained the expert rather than the non-expert source. Neither the main effect of ad strength or the ad source x ad strength interaction were significant, $F$ (1,75) = 3.10, $p > .05$, and $F$ (1,75) = .653, $p > .05$, respectively (see Figure 2).

Therefore as predicted, those with high self-esteem responded more favorably to the advertisement with strong rather than weak arguments (with no main effect of ad source) and those with low self-esteem responded more favorably to the advertisement with an expert rather than a non-expert source (with no main effect of ad source).

While an overall interaction between all 3 factors (self-esteem, ad source, and argument strength) was not found to be significant it is interesting to see that the individual means of the overall advertisement scores for those high and low in self-esteem based on ad source and strength are moving in the direction of the predicted trends as seen in Table 1. It is clear when looking at the means of those with high and low self-esteem that the high self-esteem individuals prefer the strong over the weak arguments and that they generally seem to like the advertisement more than those with low self-esteem. What also seems to be true is that both high and low self-esteem individuals are more responsive to the expert than to the non-expert as seen in Figures 1

and 2. In the case of the low self-esteem individuals the difference between their responsiveness to the expert and the non-expert is a little bigger than it is for the high self-esteem individuals, but not enough so to carry the three-way interaction.

**Discussion**

It was hypothesized that individuals low in self-esteem would be more likely to follow the peripheral route to persuasion due to a lack of cognitive resources while those with high self-esteem would be more likely to follow the central route. Therefore, it was predicted that those with high self-esteem would be more persuaded by the advertisements that contained the strong rather than the weak arguments regardless of the type of source and that those with low self-esteem would be more persuaded by the advertisements when the source was an expert rather than a non-expert regardless of the strength of the arguments. While the interaction between level of self-esteem, advertisement source and argument strength was found to be insignificant it is important to note that in general the results are moving in the correct trends in accordance with the hypothesized outcomes.

This is especially clear when looking at the data for those with high and low self-esteem separately. As was hypothesized, those with high self-esteem do in fact prefer or are more persuaded by the strong rather than the weak arguments regardless of the advertisement source. As for those with low self-esteem, they tended to prefer or were more persuaded by the expert rather than the non-expert source regardless of the relative strengths or weaknesses of the arguments. Therefore, as was expected, the interaction between argument strength and advertisement source was found to be insignificant for individuals with high and low self-esteem.

When combining the data of both high and low self-esteem individuals it was clear that there was a main effect of argument strength, advertisement source, and level of self-esteem meaning that all three variables were manipulated correctly and that there were significant differences between the strong and weak arguments, the expert and the non-expert source, and those with high and low self-esteem. The interaction between self-esteem level and argument strength was found to be significant meaning that those with high self-esteem prefer the strong to the weak arguments more so than the low self-esteem individuals. However, it was found that the interaction between self-esteem level and advertisement source was not significant, meaning that the individuals with low self-esteem did not prefer the expert over the non-exert any more so than the individuals with high self-esteem. The three-way interaction between self-esteem level, argument strength and advertisement source, was also found to be insignificant. While both of these findings refute the original hypotheses they can be partially explained when analyzing the mean ratings of individuals with high and low self-esteem of each of the four different advertisements given to participants. After analyzing these data it was clear that both those high and low in self-esteem seem to prefer the expert to the non-expert. While those with low self-esteem do show a stronger preference it is unfortunately not enough to carry the three-way interaction or the interaction between advertisement source and self-esteem level. Similar to the individual results of the high and low self-esteem individuals, when considering all participants there was no interaction between argument strength and advertisement source, meaning that the preferences of those with high and low self-esteem for the strong arguments and the expert, respectively, are so regardless of the other variable included in the advertisement.

It is not exactly clear why the three-way interaction between self-esteem level, advertisement source and argument strength and the two-way interaction between self-esteem level and advertisement source failed to be significant. However, there are certain factors that should be explored in order to help determine why such results were found. One factor that must be considered is the fact that a median split was performed in order to designate people as high or low in self-esteem, labeling those as scoring 23 or lower on the Rosenberg Self-esteem Scale as having low self-esteem, and those scoring 24 or higher as having high self-esteem. This is a potential issue because Rosenberg defined people scoring between 15-25 as having a normal level of self-esteem, those scoring above 25 as having high self-esteem and those scoring lower than 15 as having low self-esteem. Under these conditions very few participants were actually found to have "true" low self-esteem and instead most of these participants should really be thought of as having "lower" self-esteem. This is important information to take into account when considering the hypothesis concerning the inability of those with low self-esteem to follow the central route to persuasion due to a lack of cognitive resources. The problem here is that because the majority of the individuals classified as having low self-esteem are actually lower in self-esteem rather than truly low in self-esteem perhaps their levels of anxiety were not high enough to produce such a deficit in their ability to process information centrally. Also, as mentioned before, in general all participants regardless of their level of self-esteem preferred the expert to the non-expert, and while the difference between the responsiveness of those with low self-esteem to the expert and the non-expert was a little greater than it was for the high self-esteem individuals, this difference was not enough to carry the three-way interaction or the interaction between

advertisement source and self-esteem level. This again could be due to the fact that the individuals classified as having low self-esteem might not have been experiencing anxiety levels equivalent to those felt by individuals truly low in self-esteem and the therefore the amount necessary for them to follow the peripheral route to persuasion at the time in which they read the advertisement. However, with that being said, it is important to consider the fact that among college campuses, like Union College's, it is extremely hard to find individuals with truly low self-esteem and in many research studies including the present study, a median split is necessary. Similarly, when analyzing the results it is clear that there was a definite significant difference in the responses of those designated as having high and low self-esteem by way of a median split; therefore this must be considered a legitimate action.

Another possibility is that the participant's were given too much time to view and read the advertisement. In the current study, participants were given 30s to view an advertisement for a showerhead, which contained 3 relatively strong or relatively weak arguments and a picture of the showerhead that was consistent across all 4 advertisements. In a similar study, DeBono and McDermott (1994) gave participants only 15s to read an advertisement that contained 3 arguments, however, they were also given 10s to view a separate picture of the spokes model. Perhaps if the participants had been asked to view both the arguments and the image together, the experimenters would have allotted the participants more time to process both at once, similar to the current study. Similarly, participants were told that they would have 30s to read the advertisement but were also told that if they finished before the 30s they were welcome to continue on to

the next page. Therefore, the majority of participants did finish reading before the 30s were up and went on to answer the survey on the next page.

In terms of directions for future research, the first step would be to continue collecting data and to then reanalyze with the hopes that a bigger sample will yield a significant three-way interaction and two-way interaction between advertisement source and self-esteem level. Another possible idea would be to conduct an experiment with similar methodology to the current study except adding a step in which the experimenter attempts to place the participants into a state of minimal anxiety or attempts to make their current levels of anxiety more salient, perhaps in a way similar to the method in used by Greenberg et al. (1992). The idea here is that while those with low self-esteem are more likely to be anxious individuals perhaps they must be drawn into a state of real anxiety or reminded of their feelings of anxiety in order to see its effects on determining the route to persuasion the individual is able to follow. The question is if it can be assumed that the levels of constant anxiety felt by individuals with low self-esteem are enough to influence which route to persuasion they follow (especially when considering the individuals classified as having low self-esteem are actually instead "lower" in self-esteem). Perhaps if the experimenter attempted to induce a certain level of anxiety in participants before reading the advertisement, the individuals with low self-esteem would be more susceptible to having increased anxiety or would be more easily drawn into a state of anxiety than those with high self-esteem. This would then hopefully highlight the effect of anxiety on the route to persuasion an individual is able to follow by causing individuals with low self-esteem to focus on the expert rather than the non-expert significantly more than those with high self-esteem and by enough to carry the three-way

interaction and the two way interaction between self-esteem level and advertisement source. These actions would most likely not be necessary if a population of individuals truly low in self-esteem by Rosenberg's standards could be acquired. However if this population were unable to be obtained the proposed idea would be a valid next step in the realm of the current research.

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*Appendix A*: Rosenberg Self-Esteem Scale

| Statement | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| I feel that I am a person of worth, at least on an equal plane with others. | | | | |
| I feel that I have a number of good qualities. | | | | |
| All in all, I am inclined to feel that I am a failure. | | | | |
| I am able to do things as well as most other people. | | | | |
| I feel I do not have much to be proud of. | | | | |
| I take a positive attitude toward myself. | | | | |
| On the whole, I am satisfied with myself. | | | | |
| I wish I could have more respect for myself. | | | | |
| I certainly feel useless at times. | | | | |
| At times I think I am no good at all. | | | | |

*Appendix B:* Final Advertisements

1. **Strong Arguments, Non-Expert Source**
   The Dolman showerhead features 3 unique spray settings, a warm overall coverage spray, a soothing aerated spray, and a revitalizing and relaxing massage spray. This showerhead is also easily adjustable for any height. In addition, the face of the showerhead contains 100 individual spray nozzles. One customer, John Smith, recently spoke of the Dolman showerhead as his favorite product, calling its design "extremely versatile, functional, and classic."

2. **Strong Arguments, Expert Source**
   The Dolman showerhead features 3 unique spray settings, a warm overall coverage spray, a soothing aerated spray, and a revitalizing and relaxing massage spray. This showerhead is also easily adjustable for any height. In addition, the face of the showerhead contains 100 individual spray nozzles. Bathroom design expert Jeff Lewis recently spoke of the Dolman showerhead as his favorite product, calling its design "extremely versatile, functional, and classic."

3. **Weak Arguments, Non-Expert Source**
   The Dolman showerhead is available in three colors, chrome, gold and copper. This showerhead is water and mineral build-up resistant. Also, the showerhead's surface makes it easy to clean. One customer, John Smith, recently spoke of the Dolman showerhead as his favorite product, calling its design "extremely versatile, functional, and classic."

4. **Weak Arguments, Expert Source**
   The Dolman showerhead is available in three colors, chrome, gold and copper. This showerhead is water and mineral build-up resistant. Also, the showerhead's surface makes it easy to clean. Bathroom design expert Jeff Lewis recently spoke of the Dolman showerhead as his favorite product, calling its design "extremely versatile, functional, and classic."

*Appendix C:* Post Advertisement Questionnaire

Using the following scale, please answer the following questions based on the advertisement you were just exposed to.

<div align="center">

1          2          3          4          5
Very Little        Neutral        Very Much

</div>

1. _____ How much did you like the ad?

2. _____ How convincing did you find the ad?

3. _____ How effective did you find the ad?

4. _____ How much do you like the showerhead?

5. _____ If the opportunity arose, how likely would you be to purchase the showerhead?

6. _____ How persuasive did you find the ad?

7. _____ How creative did you find the ad?

8. _____ How informative did you find the ad?

9. _____ If the opportunity arose, how likely would you be to use the showerhead in your bathroom?

10. _____ How much did you enjoy the ad?

Table 1

*Means of Overall Advertisement Assessment Scores*

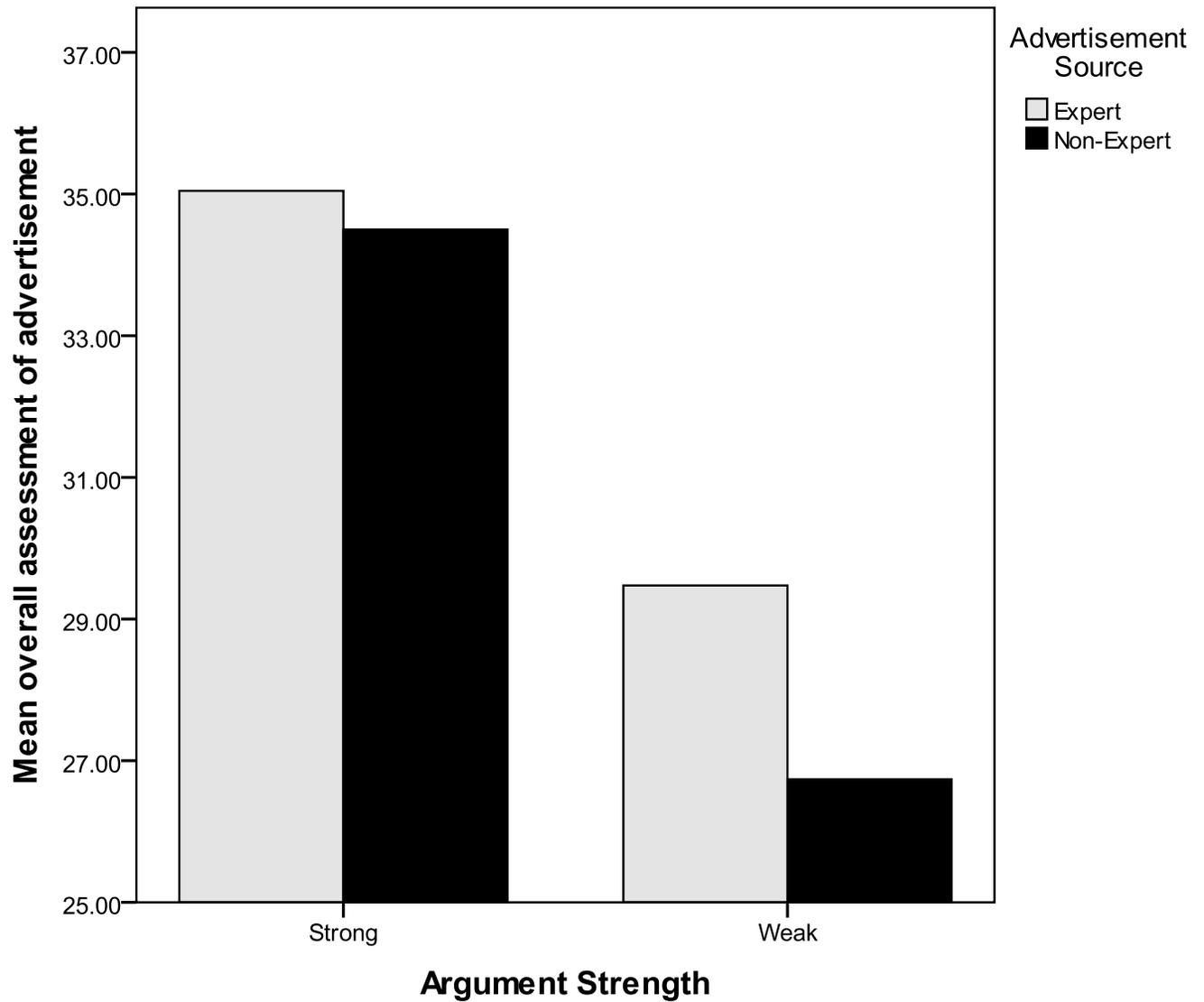|  | Expert source | | Non-Expert source | |
| --- | --- | --- | --- | --- |
|  | High SE | Low SE | High SE | Low SE |
| Strong arguments | 35.04 | 31.529 | 34.500 | 27.947 |
|  | (s=5.28) | (s=5.60) | (s= 6.95) | (s=5.35) |
| Weak arguments | 29.474 | 28.318 | 26.737 | 26.048 |
|  | (s=6.19) | (s=5.96) | (s=6.78) | (s=8.15) |

*Figure 1.* High self-esteem participants' mean overall assessment of the advertisements depending on argument strength and advertisement source.
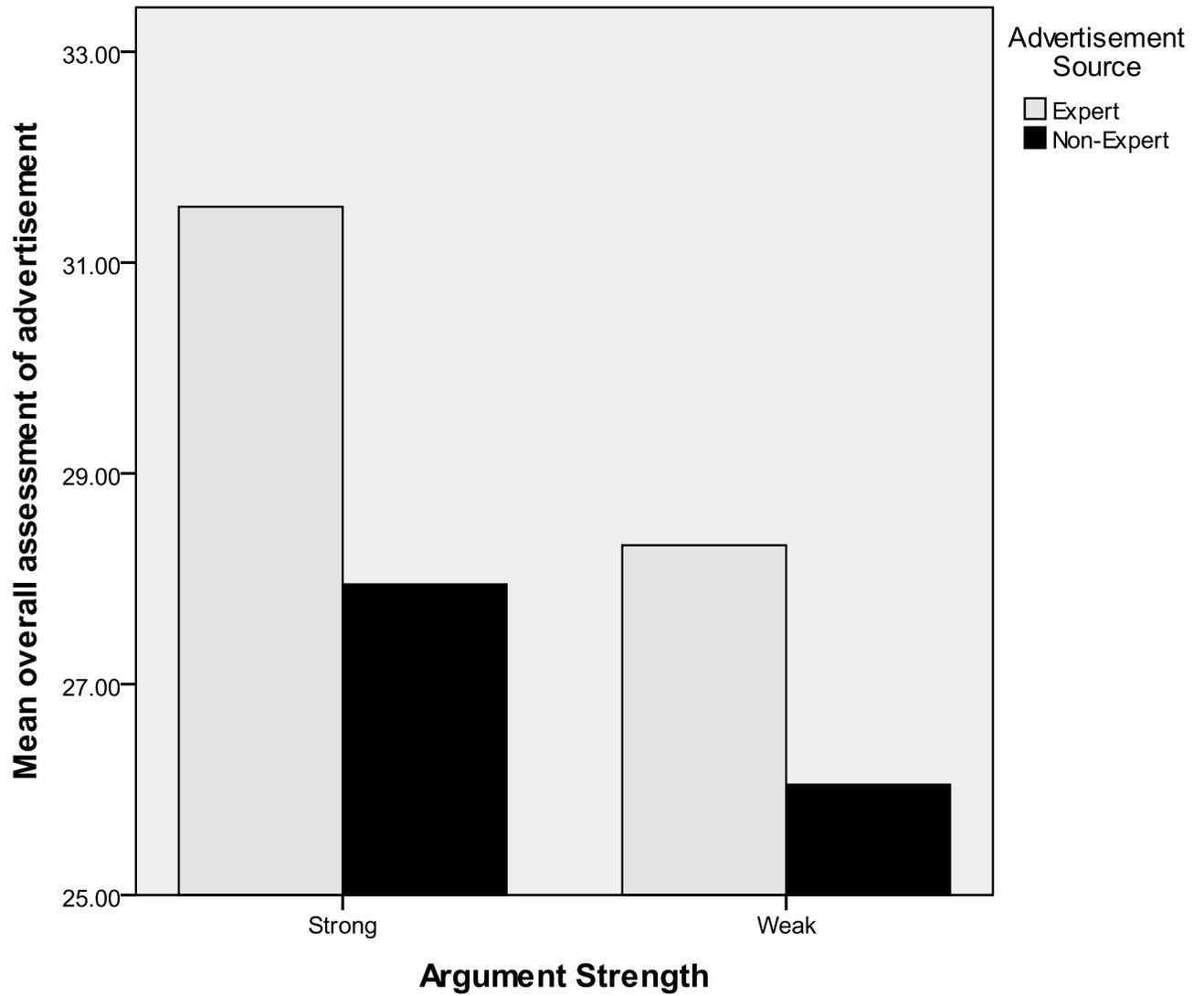
*Figure 2.* Low self-esteem participants' mean overall assessment of the advertisements depending on argument strength and advertisement source.