REEXAMINING ARGUMENTATIVENESS AND RESISTANCE TO PERSUASION

BY

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THESIS

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A recently developed receiver characteristic, argumentativeness, was examined for its relationship to attitude change and information processing in persuasive communication. Generally thought to be a flawed personality trait, argumentativeness is currently being regarded in communication studies as a beneficial personality trait that correlates with other qualities such as high grade point average, dynamism in speech, achievement orientation, competitiveness and leadership behavior.

This study examined the effect of argumentativeness on persuasion. It was predicted that high argumentatives would be more resistant to persuasion, yet the findings show that, with a strong message, high argumentatives are more likely to be persuaded by the message. The number of thoughts generated by high argumentatives contrary to the message was predicted to be higher than low argumentatives, when presented with a strong argument the high argumentatives were more accepting of the message and produced fewer thoughts against the message. A comparison of argumentativeness between males and females was also undertaken. This research indicated that, although a higher percentage of men were argumentative than women, the difference was not significant. Implications of the study and suggestions for future research were discussed.
This thesis is dedicated to my family and friends -
to my parents whose commitment to education and learning has been a constant inspiration in my life,
to my brother whose example motivated me to complete this work,
to my sister whose critical eye and willingness to assist at any hour I depended on,
to my friends with whom I’ve enjoyed arguing and who energized me with their encouragement and support,
And, finally, to God for removing all obstacles, large and small, so that I could reach my goal in completing this thesis.
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INTRODUCTION

The specific issue being investigated is the character trait of argumentativeness and its effect on persuasion. Since antiquity, persuasion has been revered and used as a teaching tool by great philosophers such as Plato. The first known set of principles governing the art of persuasion was recorded in the fourth century B.C. by Aristotle in *Rhetoric*. The ability to successfully persuade others is often seen as a powerful gift bestowed upon leaders in government and business.

Persuasive techniques are not solely the domain of great leaders, but are experienced by everyone in daily life. The term persuasion is used in this study to refer to any attitude change that results from exposure to a communication. For example, a mother attempting to convince an unwilling child to eat his peas may use persuasion to influence the child. The commercial messages we are bombarded with on television are certainly considered persuasive messages.

Persuasion research has focused on message and source variables while neglecting the effect of receiver characteristics on influencability. The few receiver characteristics that have been studied include gender, self-esteem, intelligence, and need for cognition. These characteristics may make the receiver more susceptible or resistant to persuasion from others.

Although the argumentativeness construct has only recently been defined, communication specialists have long emphasized the value of argument to society and
the individual. Arguing is a vital process in a democracy and a prevalent activity in interpersonal decision-making, conflict resolution, and social influence. Our legal and political systems depend on argumentation to determine both justice and policy (Infante, Trebing, Shepherd, Seeds, 1984).

This study will investigate the recently developed receiver characteristic, argumentativeness, for its relationship to attitude change and information processing in persuasive communication. It is predicted that highly argumentative individuals will be less likely to be persuaded by a counterattitudinal message, a message that opposes an initial attitude. This study will also investigate the counterarguments, or negative thoughts, produced by the highly argumentative individuals, predicting that more counterarguments will be produced opposing the message. This study will also analyze gender differences in argumentativeness that may lead to persuasibility.
BACKGROUND

PERSUASION

The effects of persuasion are felt by everyone daily, but it was not until this century that persuasion, or attitude change, was investigated experimentally. The first large-scale studies of attitude change were conducted by Carl Hovland and his colleagues during World War II. Hovland interested a number of psychologists in attitude research during the war while experimenting on the persuasive impact of various U.S. Army morale and training films (Hovland, Lumsdaine, & Sheffield, 1949). Since then, extensive literature has been devoted to persuasion and attitude change.

Traditionally, the emphasis of persuasion was on the actual message with the assumption that all receivers were persuaded in the same way by a strong message. Eventually, within the last 40 years, social science researchers began studying other variables that play a role in persuasion such as the source of the message, channels, environmental factors and the receiver.

Many persuasion theories have been developed over the years that attempt to explain the process of persuasion. All of the early theories ignore the measurement of the recipient's thoughts as they attended to the persuasive messages and the effects of these thoughts on persuasion. This study is based on the cognitive response approach.
to persuasion originally outlined by Greenwald (1968) and subsequently studied by others, including Petty and Cacioppo (1981). The cognitive response approach postulates that when people receive persuasive communications, they will attempt to relate the new information to their existing knowledge about the topic. The persuasive effect of the message is due to the thoughts generated by exposure to the message. A person may consider information that is not in the communication itself. These "cognitive responses" may agree, disagree, or be irrelevant to the message. To the extent that the message evokes thoughts that are supportive of the message, the subject will tend to agree to the position advocated by the message. Yet, if the message generates negative thoughts (i.e., counterarguments), then the subject will disagree with the position advocated by the message. Extensive negative thoughts, or counterarguing, may result in attitude change opposite the intended message.

The receiver plays an important role in the effectiveness of the persuasive message. After considering the cognitive response of the recipient, it is also important to study the personality traits that may make the message receiver more or less persuasible. Hovland and Janis (1959) investigated personality characteristics and concluded that a predisposition to change opinions is not wholly specific to the topic or subject matter. Many researchers have studied certain characteristics that make one person more persuasible than another. These studies include gender, self-esteem, intelligence and need for cognition. In recent studies on receiver characteristics, social scientists have linked argumentativeness, a newly defined characteristic, to persuasion.
RECEIVER CHARACTERISTICS

Studies in self-esteem and intelligence show a significant correlation with persuasibility (Rhodes and Wood, 1992). Moderate self-esteem individuals tend to be more influenced than those of low and high self-esteem. The reason for this is that low self-esteem individuals are less willing to process complex or anxiety-provoking messages while high self-esteem individuals who are willing to process such material tend to be confident in their own opinions. This study also shows that low intelligence individuals tend to be influenced more than high intelligence ones.

Another individual difference that affects message processing and behavior is need for cognition. Need for cognition is defined as "the intrinsic enjoyment individuals derive from engaging in effortful cognitive activities" (Cacioppo and Petty, 1982). Cacioppo and Petty developed the need for cognition scale (NCS) to distinguish between individuals who are intrinsically motivated to engage in and enjoy effortful analytic activities and those who are not. This scale has been used to study other persuasion variables such as message elaboration and peripheral cues (Petty and Cacioppo, 1986).

ARGUMENTATIVENESS

Researchers have only recently begun to examine the personality characteristic of argumentativeness. Generally thought to be a flawed personality characteristic, argumentativeness is currently being regarded in communication studies as a beneficial personality characteristic that correlates with other characteristics in subjects such as high grade point average, dynamism in speech, achievement orientation, competitiveness, and leadership behavior (Infante, 1982). Arguing is also associated with a number of favorable outcomes such as increased learning, improved accuracy in
social perspective-taking, reduced egocentric thinking, greater creativity, and better
decision-making and problem solving (Johnson & Johnson, 1979).

Argumentativeness has been defined as "a generally stable trait which
predisposes the individual in communication situations to advocate positions on
controversial issues and to attack verbally the positions which other people take on
issues" (Infante and Rancer, 1982, p.72). The high argumentative perceives arguing as
an exciting challenge, while the low argumentative finds it an unpleasant experience.

Infante and Rancer found that following the argument the individual feels
invigorated, satisfied, and experiences a sense of accomplishment. Those who avoid
arguing recognize the potential for argument but try to avoid it and have unpleasant
feelings before, during and after the argument. Those who avoid arguments have very
little confidence in their ability to argue while the opposite is true of highly
argumentative individuals.

In studying argumentativeness, Infante and Rancer (1982) made a distinction
between argument which attacks an issue rather than a person. Arguing to derogate
another person was termed “verbal aggressiveness” whereas arguing to discuss a
controversial issue was termed “argumentativeness.”

The research suggests high argumentatives received more high school training
in argumentation, prefer smaller classes, were born earlier in the family birth order, and
are more liberal (Infante, 1982). Argumentativeness is a relatively stable trait, rather
than state, that is resistant to modification (Sanders, Wiseman, Gass, 1994).
High trait argumentativeness is predictive of the perceptions, expectations, and the motivation which individuals have for a particular argumentative situation (Rancer, Baukus & Infante, 1985). In studying belief structures about arguing, high argumentatives perceive arguing primarily as a learning experience, while low argumentatives believe arguing increases conflict, and is an indication of hostility. High argumentatives view arguing as a means of reducing tensions and conflict as well as conveying and receiving information.

In group decision-making, studies show that a diversity of points of view can be conducive to effective problem-solving, and that a willingness to disagree results in more alternatives considered in making a decision (Torrance, 1957; Ziller, 1955). The influence of argumentativeness upon group decision-making points to highly argumentative or extremely argumentative individuals being chosen as leaders over moderate to mildly argumentative individuals. Highly argumentative individuals have more influence on the group’s decision-making and although the extremely argumentative individual has less influence, the extremely argumentative person plays a role in extending the range of choices for a solution (Schultz, 1982).

Using the argumentativeness construct in studying persuasion, Infante and Rancer (1982) predicted that argumentativeness would positively relate to the persuasiveness of speakers and negatively to the persuasibility of receivers. High trait argumentatives should be less likely to yield to message recommendations because they tend to counterargue against positions advocated in message stimuli. Thus one would predict a strong positive correlation between argumentatives and
counterarguments and a negative correlation between counterargument and attitude change (Kazoleas, 1993).

ARGUMENTATIVENESS SCALE

In an effort to measure argumentativeness, the Argumentativeness Scale was developed by Infante and Rancer (1982) and has since been tested and used in numerous studies (Dowling and Flint, 1990; Sanders et al, 1992). The scale is based on a 20-item self-report questionnaire. Implications from the scale indicate that it should be useful in predicting behaviors in argumentative situations, in studying communication and social conflict and in studying persuasion (Infante and Rancer, 1982).

GENDER AND ARGUMENTATIVENESS

In persuasion studies which analyzed for gender differences women appeared to be more persuasible than men (Eagly, 1978). Currently, two explanations exist for these observed differences. The first explanation is that women may be socialized to be cooperative and maintain social harmony, facilitating agreement (Eagly, 1978), while men are socialized to be assertive and independent, facilitating resistance to persuasion. The second explanation is that sex differences may occur because the persuasive message employed in studies are ones that men are more interested in or knowledgeable about than women (Eagly and Carli, 1981).

Other studies also suggest there are gender differences in argumentativeness. A study by Infante (1982) indicates that more men than women are high in trait argumentativeness. Analysis of the subjects defined as high or low argumentatives revealed 58% of males and 41% of females were high in argumentativeness. In another study, Rancer and Dierks-Stewart (1985) report males and females do not
differ significantly on trait argumentativeness, but that individuals classified by sex-role orientation do. Those with traditionally male sex-role orientations exceed all others in trait argumentativeness.

The Argumentativeness Scale has come under scrutiny for its potential gender-bias. Nicotera (1989) questioned the effects of the wording on the scale's items by arguing that responses might be more a reflection of social desirability than their actual behavior. Nicotera discovered that women found the items on the Argumentativeness Scale to be less socially desirable than did men. In another study, changes of wording in the scale from "argument" and its derivatives to "argument over issues" showed no gender differences in argumentativeness (Dowling and Flint, 1990).

Studies on the Argumentativeness Scale indicate that the problems with the scale are that women may be thinking of arguing as fighting and bickering rather than dealing with issues. Yet, when the scale was given to male and female forensics competitors who are adept at arguing and should be able to relate "arguing" to debating rather than fighting and bickering, differences between male and female forensics competitors were significant. Male participants scored significantly higher than female participants on the argumentative instrument (Colbert, 1993).

The importance of the sex difference on a societal level is that those who argue less have less potential for achieving social influence and power. Also, research has revealed that the credibility of individuals, male and female, who are highly argumentative is perceived more favorably in comparison to the credibility of less argumentative individuals (Infante, 1985). Thus, inducing women to be more argumentative has a favorable effect on women's credibility.

In leadership roles, women who wish to be perceived as leaders and wish to survive in the upper levels of an organization must learn to remove the societal expectations of pleasing others. For women, it may not be possible to be both liked and a leader (Schultz, 1982). For women to be perceived as leaders they must
articulate more forcefully and be more argumentative in the presentation of issues because argumentative people are more likely to be perceived as leaders and will be more influential. In contrast, Infante and Gorden (1985) found little evidence to support the theory that women who exhibit trait argumentativeness are subjected to bias in organizational contexts. Despite expectations, based on cultural biases, training women in argumentativeness may be encouraging a beneficial rather than a detrimental skill.

In training women to be more argumentative, Anderson, Schultz and Staley (1987) found that exposing women to information that alters their perception of argumentativeness will influence them to change their attitude in a positive direction. The research further suggests that female trainers may act as positive role models in influencing female subjects to change their attitudes toward argumentativeness in more dramatic ways than male subjects.

In conclusion, research demonstrates that women are typically less argumentative than men. Yet, training in argumentation can affect the attitudes women have toward argumentativeness. And, despite cultural bias, argumentative women in leadership positions may be viewed as highly effective.

ARGUMENTATIVENESS AND RESISTANCE TO PERSUASION

Two studies have recently been conducted on argumentativeness and resistance to persuasion (Levine and Badger, 1993 and Kazoleas, 1993). While both studies hypothesized that high trait argumentatives would be more resistant to persuasion than low trait argumentatives, the results of the two studies conflict. The Levine and Badger study failed to confirm this hypothesis, while Kazoleas obtained support for the prediction.
In the Levine and Badger study, 33 students from two basic speech classes each chose a persuasive topic. Most of the topics were pro-attitudinal. One week prior to the first speech the students completed the 20-item Argumentativeness Scale to determine high and low argumentativeness and an opinion survey to measure favorability, relevance and knowledge of the topic. The following week students listened to persuasive speeches. Following the last persuasive speech the students completed the opinion survey a second time. The data indicated that high argumentatives had more attitude change in the direction of message recommendations than lows, contrary to the prediction.

The Levine and Badger study had many methodological problems which may have contributed to the failure to confirm the hypothesis. These problems included a small sample size (n=33), delay in response to the persuasive topic, no control for the quality of the speech or the topic selected, and topics that were, for the most part, pro-attitudinal such as Safety Belts, Not Drinking and Driving and Recycling. There was no examination of cognitive responses to determine whether high argumentatives generated more positive or negative cognitive responses and were consequently less persuaded. Most subjects revealed favorable attitudes towards the topics in an investigation of their initial attitude, indicating that subjects may have found little basis for counterarguing.

The Kazoleas study used a post-test only design with a no-message control. Three persuasive messages were presented to 82 male and 106 female undergraduate students enrolled in various introductory-level university courses. The persuasive
messages consisted of a one-minute televised message with a known source, James Worthy (Anheuser-Busch’s alcohol moderation campaign) and two printed messages (a quarter-page newspaper ad opposing clean air legislation and the Clean Air Act and a one-page pamphlet from the American Cancer Association advocating abstention from sunbathing and tanning booths, while detailing dangers of exposure to the sun).

Following exposure to the messages, respondents were given three minutes to write down important thoughts about the messages. Then they were asked to complete a questionnaire including manipulation check items, attitude items, and questions to determine involvement with the topic, perceptions of source trustworthiness and expertise, and after the third message, measures of argumentativeness, and demographic information. The no-message control group was asked to complete the same attitude and demographic items.

In the Kazoleas study, four hypotheses were tested, yet only two were substantiated from the research. The two confirmed hypotheses were that 1) High argumentatives will exhibit less attitude change than low argumentatives and, 2) As an individual’s level of argumentativeness increases, counterargument production also increases.
The purpose of this research was to examine the effect of argumentativeness when an individual is presented with a strongly counterattitudinal message. High argumentatives were expected to be more critical of incoming messages and less likely to yield to a persuasive message. Because high argumentatives are more likely to scrutinize the message they were expected to produce more arguments against the message recommendations.

Previous studies on argumentativeness show a difference in gender, yet these studies have been disputed due to questions about socialization and problems with gender-specific topics. This study examined whether males or females are more argumentative based on a gender-neutral message.

**H1:** High trait argumentatives will exhibit less attitude change, or more resistance to persuasion, in the direction of the recommended counterattitudinal message than low trait argumentatives.

**H2:** High trait argumentatives will produce more counterarguments to the recommended counterattitudinal message than low argumentatives.

**R1:** Will more males than females exhibit high trait argumentativeness?

In an effort to verify the hypothesis that high trait argumentatives are more resistant to persuasion, this study partially replicated the Levine and Badger (1993) study with methodological changes designed to increase internal validity. This study
attempted to correct the methodological problems in the previous study. It provided a larger sample size, eliminated pre-testing, rendered an immediate response after exposure, controlled the message quality and topic and provided more data on argumentativeness and counterarguments through thought listing. It differed from the Kazoleas (1993) study in that the message was not an advertisement. Instead, a persuasive argument was presented in written form, providing subjects an opportunity to process issue-relevant arguments. Exposure is self-paced rather than forced, thus, reducing reliance on peripheral cues (Petty and Cacioppo, 1986). This would, presumably, bring out more argumentativeness due to the amount of material available to dispute and the ability to take more time to comprehend the information. The message topic was strongly counterattitudinal in an effort to increase the subject’s levels of attention and cognitive responses. Counterattitudinal arguments have been found to produce more scrutiny and, thus, more recall than proattitudinal arguments (Petty and Cacioppo, 1986).

A second hypothesis from the Kazoleas study was tested to verify the relationship between argumentativeness and counterarguments. This information is important because spontaneous counterarguing occurs during message reception and is related to final attitude, yet the amount of counterarguments are separate from attitude change (Petty, 1981). The partial relation between counterarguing and final attitude, removing the effect of subjects initial attitude, is nonsignificant. In other words, counterarguing does not determine final attitudes, instead, initial attitudes determine both the amount of counterarguing and the final opinion (Petty, 1981).
METHODOLOGY

RESEARCH DESIGN

The study used a post-test only control group design. Subjects read a persuasive message on senior comprehensive exams. The control group, consisting of one-third of the respondents, were exposed to an irrelevant message before completing the same questionnaire.

RESPONDENTS

A total of 96 students from two summer term classes at the University of Central Florida participated in the study. Subjects were obtained from a general elective sociology class and a mandatory speech class. There were 43 males and 53 females in the study. The control group consisted of 31 subjects and the experimental group consisted of 65 subjects.

SURVEY

The survey (Appendix A) was introduced to the subjects as an important issue that the university administration was considering implementing in which the administration was seeking student's input. A two-page persuasive message on instituting senior comprehensive exams was followed by a blank page with boxes asking the students to list one thought per box concerning their impressions of the
message. Demographic information including gender, age, number of siblings, birth order, race, year in college and major area of study were obtained. A Likert-type scale of ten questions on attitude change with five relevant and five irrelevant questions were answered. The questionnaire then asked subjects to answer seven semantic differential scale questions on instituting senior comprehensive exams and three semantic differential questions on the source of the message, which was reported as the Chancellor of the state university system.

The final section of the survey was the Argumentativeness Scale developed by Infante and Rancer (1982).

PROCEDURE

Both control and experimental subjects were asked to read the message and answer the questionnaire. One-third of the subjects of each class were given the control group message on increasing tuition at the university (Appendix B) but answered the same questionnaire as the experimental subjects.

The procedure of thought listing, as reported by Petty and Cacioppo (1986), can be completed before, during or after message exposure and the thoughts categorized into theoretically meaningful units by the subjects. After all the subjects completed the questionnaire, they were asked to rate their thoughts toward the message in the thought listing section as positive, negative, neutral or irrelevant. After completing these items, respondents were thanked for their time, and debriefed.
INDEPENDENT MEASURES

Argumentativeness was assessed using Infante and Rancer’s (1982) Argumentativeness Scale to determine high and low argumentatives. Gender differences in argumentativeness were also assessed.

DEPENDENT MEASURES

Attitude change was measured through the survey which included five Likert-type questions on attitude change, seven semantic differential questions on the favorability, benefit, and relevance of the message, and three semantic differential questions on the source’s honesty, trustworthiness, and expertise.
RESULTS

EFFECTS OF THE MESSAGE

A series of one-way ANOVAS were conducted to assess the persuasiveness of the senior comprehensive exam message. As shown in Table 1, the experimental group, which read the message, reported significantly more positive attitudes toward the issue than the control group on four of the eight attitude items. Similar, strong trends were obtained for the remaining items. Overall, the data indicate that the message was persuasive. This finding legitimizes the test of Hypothesis 1, which states that high argumentatives will exhibit less attitude change than low argumentatives.

TABLE 1

EXPERIMENTAL AND CONTROL GROUP ON ATTITUDE QUESTIONS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Mean (n=65)</th>
<th>Control Mean (n=31)</th>
<th>DF</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Question #2</td>
<td>3.39</td>
<td>2.52</td>
<td>1</td>
<td>10.13</td>
<td>&lt;.002</td>
</tr>
<tr>
<td>2. Question #3</td>
<td>3.11</td>
<td>2.68</td>
<td>1</td>
<td>3.77</td>
<td>&lt;.055</td>
</tr>
<tr>
<td>3. Question #5</td>
<td>3.17</td>
<td>2.74</td>
<td>1</td>
<td>3.42</td>
<td>&lt;.068</td>
</tr>
<tr>
<td>4. Question #7</td>
<td>3.15</td>
<td>2.71</td>
<td>1</td>
<td>3.29</td>
<td>&lt;.073</td>
</tr>
<tr>
<td>5. Question #9</td>
<td>2.40</td>
<td>2.90</td>
<td>1</td>
<td>5.90</td>
<td>&lt;.017</td>
</tr>
<tr>
<td>Semantic Differential/Topic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valuable, Desirable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Beneficial</td>
<td>2.80</td>
<td>3.90</td>
<td>1</td>
<td>9.60</td>
<td>&lt;.003</td>
</tr>
<tr>
<td>8. Relevant</td>
<td>3.29</td>
<td>4.10</td>
<td>1</td>
<td>2.62</td>
<td>&lt;.109</td>
</tr>
</tbody>
</table>

Table 1 shows that the experimental group was indeed persuaded by the message.
HYPOTHESIS 1: ATTITUDE CHANGE

Hypothesis 1 predicted that high trait argumentatives would exhibit less attitude change than low trait argumentatives. To test this hypothesis, the subjects were asked ten Likert-type attitude questions after receiving the message, five of which related to their attitude on senior comprehensive exams. The relevant questions in the survey were questions 2, 3, 5, 7, and 9. The answers were rated on a scale of 1 to 5, with 1 indicating “strongly disagree” and 5 indicating “strongly agree”.

The relevant attitude questions were stated as:

Question 2: I would prefer taking senior comprehensive exams rather than taking regular final examinations in courses that will not affect my career.

Question 3: Senior comprehensive exams would improve teaching effectiveness at UCF.

Question 5: UCF should institute comprehensive exams for seniors.

Question 7: I believe my degree would be more valuable if UCF instituted senior comprehensive exams.

Question 9: I would consider transferring to another university if UCF instituted senior comprehensive exams.

Additionally, the subjects were asked to respond to the semantic differential scales shown in Tables 1 and 2.
As shown in Table 2, none of the Likert or semantic differential items yielded significant differences in attitude change between high argumentatives and low argumentatives. Hypothesis 1 was not supported.

A second analysis was conducted using norms of the actual scores of high (n=33), medium (n=49), and low (n=14) argumentatives in order to purify the sample and produce true high and low argumentatives. As in the median split of argumentativeness, the results showed no significant difference between high and low argumentatives on attitude change.
HYPOTHESIS 2: POSITIVE AND NEGATIVE THOUGHTS

Hypothesis 2 predicted that high argumentatives would produce more counterarguments, or negative thoughts, than low argumentatives. The test of this hypothesis was accomplished by asking subjects to list their thoughts about what they read. After the survey was completed, subjects were asked to rate their own thoughts as positive, negative, or neutral, in relation to the message. Table 3 summarizes the data.

An analysis of the message as strongly counterattitudinal revealed no significant difference between positive and negative thoughts in the thought listing of the experimental group. The means revealed that there was no significant difference between positive (1.39) and negative (1.30) thoughts in the experimental group.

**TABLE 3**

MEANS AND ONE-WAY ANOVAS FOR POSITIVE AND NEGATIVE THOUGHTS

<table>
<thead>
<tr>
<th>Variable</th>
<th>High Arg Mean (n=50)</th>
<th>Low Arg Mean (n=46)</th>
<th>DF</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Thoughts</td>
<td>1.44</td>
<td>0.82</td>
<td>1</td>
<td>5.05</td>
<td>&lt;.03</td>
</tr>
<tr>
<td>Negative Thoughts</td>
<td>1.28</td>
<td>1.26</td>
<td>1</td>
<td>0.003</td>
<td>&lt;.95</td>
</tr>
</tbody>
</table>

The results of the test show that high argumentatives had significantly more positive thoughts than low argumentatives (p<.03). The results also indicate no significant difference in the number of negative thoughts between high and low argumentatives (p<.95). Hypothesis 2 was not supported.
GENDER

Research question 1 asked if there were more males than females who would exhibit high argumentativeness. To test this question, the argumentatives scores of males and females were compared. Of the total number of males in the study (n=43), 25 were qualified as high argumentative, equating to 58% of the male subjects, similar to the Infante (1982) study. Of the total number of females in the study (n=53), 25 were qualified as high argumentative, equating to 47% of the female subjects. A higher percentage of males than females in the study were rated as high argumentative.

In addition, a one-way analysis of variance was conducted to compare argumentativeness scores by gender and the results are shown in Table 4.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Argumentativeness Mean (Raw Score)</th>
<th>DF</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males (n=43)</td>
<td>69.19</td>
<td>1</td>
<td>1.22</td>
<td>&lt;.27</td>
</tr>
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<td>Females (n=53)</td>
<td>66.42</td>
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Results of the test revealed that there was no significant difference between males and females on the argumentativeness scale.
ANCILLARY DATA: RATINGS OF SOURCE

Additional information was obtained on the source of the message which was identified as the Chancellor of the state university system. A series of one-way ANOVAS showed no significant differences in source ratings between the experimental and control groups. Similarly, one-way ANOVAS comparing source ratings of high and low argumentatives showed no significant differences. Tables 5 and 6 summarize these analyses.

**TABLE 5**

EXPERIMENTAL AND CONTROL GROUP ON SEMANTIC DIFFERENTIAL RATINGS OF SOURCE

<table>
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<tr>
<th>Variable</th>
<th>High Arg Mean (n=50)</th>
<th>Low Arg Mean (n=46)</th>
<th>DF</th>
<th>F</th>
<th>P</th>
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<tbody>
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<td>1</td>
<td>1.85</td>
<td>&lt;.18</td>
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</tbody>
</table>

**TABLE 6**

COMPARISON OF HIGH AND LOW ARGUMENTATIVES ON SEMANTIC DIFFERENTIAL RATINGS OF SOURCE

<table>
<thead>
<tr>
<th>Variable</th>
<th>High Arg Mean (n=50)</th>
<th>Low Arg Mean (n=46)</th>
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<tr>
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</tr>
<tr>
<td>Honest</td>
<td>3.46</td>
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DISCUSSION

This study focused on the personality characteristic of argumentativeness and its effect on persuasion. The effect of gender on argumentativeness was also examined. Results of the study yielded counterintuitive findings from those predicted.

In examining the persuasiveness of the message, the results indicate that the message was indeed persuasive. The senior comprehensive exams message was assumed to be counterattitudinal, yet the arguments for instituting these exams were persuasive enough to generate positive thoughts about the message. There were significantly more positive thoughts and attitude changes generated toward instituting senior comprehensive exams from subjects who received the message treatment than from control subjects who did not receive the message.

In examining the effect of the counterattitudinal message on argumentativeness, this study anticipated that high argumentatives would be less persuaded by a counterattitudinal message than low argumentatives. The results of the study did not support this hypothesis. Those who received the message were persuaded by it.

As a second hypothesis, this study proposed that high argumentatives would produce more negative thoughts toward the counterattitudinal message than low argumentatives. The prediction was not supported by the data on thought listing. In
comparing the data of positive thoughts between high and low argumentatives, high argumentatives actually produced significantly more positive thoughts than the low argumentatives. There was no significant difference in the number of negative thoughts of high and low argumentatives, yet overall high argumentatives produced more thoughts, positive and negative, toward the message.

Investigation of the semantic differential data on the source of the message revealed there were no significant differences in the ratings of source between the control group and the experimental group. Both the experimental and control groups gave the source a moderate rating. For the experimental group subjects, the source did not enhance persuasion, yet they were persuaded by the message.

In examining gender and argumentativeness, this study questioned whether more males than females would exhibit high argumentativeness. The data of the Argumentativeness Scale revealed that, of the total subjects, a greater percentage of men than women were argumentative. A one-way analysis of variance indicated that the difference between the mean argumentativeness scores was not significant.
IMPLICATIONS OF RESULTS

The results of the study contradict the hypotheses and seem to contradict the argumentativeness construct, yet further investigation of the actual message may reveal the reasons for these results. The message was adapted from Petty and Cacioppo’s (1986) examples of strong arguments. Although one would intuit that senior comprehensive exams would be distasteful to students, the message was designed to elicit predominantly favorable thoughts.

In the case of senior comprehensive exams, perhaps subjects with high argumentativeness, which is shown to positively correlate with high need for cognition (Sanders et al., 1992), would welcome the opportunity to exert cognitive effort to complete their degree. As one high argumentative subject stated in the thought listing, “It might not be a bad idea to make students think for a change.” Perhaps students with low argumentativeness have lower self-esteem or confidence, especially in their ability to pass the exams and, thus, were less persuaded.

The message did not reveal any negative consequences of the senior comprehensive exams. Perhaps high argumentatives felt they did not have anything to argue about. As a second point to this, subjects were allowed to rate their own thoughts and those who had more questions about the message rated those thoughts as neutral rather than negative. This may have skewed the negative results so that they were not revealed in the research.
As stated in previous research (Dowling and Flint, 1990), the Argumentativeness Scale should be reworded so that “argument” and “arguing” reflect the meaning of arguing controversial issues rather than bickering. This may have had an effect on the results, especially as they pertain to gender issues.

Finally, there were two examples of high argumentatives who simply stated in one thought that senior comprehensive exams were unnecessary. Perhaps the subjects would have generated more arguments in an oral situation rather than written where the effects of feedback and controversy are immediate. Typically, the research in argumentativeness studies depends on subject’s self-reported attitudes presented in written form. Although no research is available to compare written and oral responses, Infante’s research (1981) with two arguers and an observer revealed high argumentatives, when compared to lows, were more verbose, more inflexible, behaved as if they were more interested in the argument, displayed greater willingness to present positions and refute positions, communicated with greater expertise, had more dynamism, and displayed greater apparent argumentative skill.

SUGGESTIONS FOR FURTHER RESEARCH

Prior research indicates that need for cognition is positively related to argumentativeness (Sanders et al., 1992). From the research it seems that high argumentatives exhibited many of the characteristics of those with high need for cognition. Future research may examine the differences between argumentativeness and need for cognition. From the Elaboration Likelihood Model (Petty and Cacioppo,
we know that those high in need for cognition use the central route to persuasion, which means they are influenced by argument quality, rather than the peripheral route to persuasion, which relies on simple cues such as the number of arguments or other’s thoughts on the topic. Both high argumentatives and people with high need for cognition are internally motivated to process a message but are the internal motivations for the cognitive effort exhibited in argumentativeness and need for cognition the same or different? Are high argumentatives motivated to hold correct attitudes or simply controversial attitudes? Do high argumentatives enjoy playing “devil’s advocate”, while those with high need for cognition simply enjoy the effort of thinking and reflecting? How are the constructs different?

Another area for future research may be found in studying the effect of self-esteem on argumentativeness and persuasion. Infante (1981) revealed that high argumentatives conveyed an appearance of more expertise and communicated with more dynamism than low argumentatives. This may indicate that high argumentatives had greater self-esteem or simply more willingness to argue and more argumentative skill. Past research on self-esteem and persuasion indicates that moderate self-esteem yields the greatest persuasion while high and low self-esteem yields less persuasion (Rhodes & Wood, 1992). People with high self-esteem are less persuaded because they are confident of their opinions while people with low self-esteem are also less persuaded because of low levels of reception.

Finally, Infante (1982) reports that high argumentatives have higher grade point averages, prefer smaller classes, choose professions which require more high
school training in argumentation, have an earlier birth order, and are more conservative. A secondary investigation of the data may provide some validity to this assertion. Although this study did not obtain information on grade point averages, future research which acquires this information may provide some enlightenment on the subject of intelligence and argumentativeness.

It seems there are more variables influencing the argumentative individual than present research indicates. Argumentativeness has been shown to be a positive personality trait that causes resistance to persuasion in certain circumstances while acceptance of a persuasive message in other circumstances. This study presented a strong message that was accepted by high argumentatives who generated more positive thoughts towards the message. This study indicates that it is important to study the message as well as the receiver characteristic in predicting persuasibility. In evaluating the message, certain criteria should be studied such as the medium for the message, direction of the message, and strength of the message. Receiver characteristics, such as argumentativeness, remain an important aspect of persuasion research and warrant further investigation.
APPENDIX A

Senior Comprehensive Exam Survey
Please take a few minutes to read the following information concerning senior comprehensive exams and answer the survey questions that follow.

REQUIRED SENIOR COMPREHENSIVE EXAMS AT UCF

The University of Central Florida is considering instituting senior comprehensive exams. Senior comprehensive exams are final exams taken at the end of the senior year that encompass all the materials studied for the degree program. Comprehensive exams are similar to the CLAST exam which is taken after two years of general education to obtain an Associate of Arts degree. The exam would be administered by the department of each major program. If instituted, seniors would be responsible for passing all courses offered in their degree program as a prerequisite for graduating. The Chancellor of the state university system has offered the following considerations to be taken under advisement. A decision on senior comprehensive exams is expected to be reached by September, 1995. If instituted, the exams would take effect Spring 1996.

At schools where senior comprehensive exams have been implemented, all regular final examinations for seniors are typically eliminated. This elimination of final exams in all courses for seniors allows them to better integrate and think about the material in their major area just prior to graduation rather than spending a lot of time cramming to pass tests, often in courses outside their majors. The comprehensive exam places somewhat greater emphasis on the student’s major and allows greater concentration on the material that the student feels is most relevant.

Furthermore, the comprehensive exam requirement has led to a significant improvement in the quality of undergraduate teaching in the schools where it has been tried. Data from the Educational Testing Service confirm that teachers and courses at the schools with comprehensive exams were rated more positively by students after the exams than before. The improvement in teaching effectiveness appears to be due to departments placing more emphasis on high quality and stimulating teaching because
departments are perceived poorly when their majors don’t do well on the exam. For example, at the University of North Carolina, student ratings of courses increased significantly after comprehensive exams were instituted.

The National Scholarship Achievement Board recently revealed the results of a five-year study conducted on the effectiveness of comprehensive exams at Ohio State University. The results of the study showed that since the comprehensive exam has been introduced at OSU, the grade point average of undergraduates has increased by 31%. At comparable schools without the exams, grades increased only 8% over the sample period. The prospect of a comprehensive exam clearly seems to be effective in challenging students to work harder and faculty to teach more effectively. It is likely that the benefits observed at Ohio State University could also be observed at the University of Central Florida.

Data from the University of Virginia, where comprehensive exams were recently instituted, indicate that the average starting salary of graduates increased over $4000 over the two-year period in which the exams were begun. At comparable universities without comprehensive exams, salaries increased only $850 over the same period. As Saul Siegel, a vice-president of IBM noted in Business Week recently, “We are much quicker to offer the large salaries and executive positions to these graduates because by passing their area exam, they have proven to us that they have expertise in their area rather than being people who may or may not be dependable and reliable.” Another benefit is that universities with the exams attract larger and more well-known corporations to campus to recruit students for their open positions. The end result is that students at schools with comprehensive exams have a 55% greater chance of landing a good job than students at schools without exams.

Finally, the University of Central Florida is more likely to be considered for financial aid. A study by the U.S. Department of Education revealed that universities with the comprehensive exam requirement average about 32% more financial aid available to students than comparable universities without exams. Richard Collins, Director of Financial Aid at the University of Indiana has written that since the
comprehensive exam was instituted at the University five years ago, more individuals and corporations have been willing to donate money for student scholarships.

In an effort to raise the scholastic aptitude of its students, improve teaching, attract better job prospects, and increase financial aid, the University of Central Florida is seriously considering instituting senior comprehensive exams. Students graduating Spring 1996 or later would be affected by this new requirement if implemented.
THOUGHT LISTING
Please take a few minutes to list thoughts you had while reading the above information. Please write one thought per box, you do not need to use every box.
DEMOGRAPHICS

Please fill in the blanks.

1. Gender: Male _____ Female _____
2. Date of Birth: (month/day/year) ____/____/____
3. Number of Siblings _______________________
4. Birth Order (First child, second child, etc.) ___________
5. Race: Caucasian ______, African American ______
   Hispanic ______, American Indian ______, Eskimo ______
   Asian ______, Other __________________
6. Year in College: __________________
7. Major area of study: _______________________

OPINION SURVEY

Please answer the following questions concerning statements about UCF's proposed senior year/graduation policy. There are no correct answers and your answers will remain anonymous.

Please respond by using the numbers below to correspond to your answers.

- strongly disagree = “1” in the blank.
- disagree = “2” in the blank
- no opinion = “3” in the blank
- agree = “4” in the blank
- strongly agree = “5” in the blank

1. I feel UCF should increase tuition to provide improvements to facilities.
2. I would prefer taking senior comprehensive exams rather than taking regular final examinations in courses that will not affect my career.
3. Senior comprehensive exams would improve teaching effectiveness at UCF.
4. If UCF increased my tuition by 3-5% I would be forced to discontinue my degree.
5. UCF should institute comprehensive exams for seniors.
6. The UCF library is in need of improvement and I would pay the additional 3-5%.
7. I believe my degree would be more valuable if UCF instituted senior comprehensive exams.
8. I am concerned that a tuition increase at UCF would not provide the improvements needed.
9. I would consider transferring to another university if UCF instituted senior comprehensive exams.
10. An increase in tuition to provide additional faculty and classes would assist me in obtaining my degree within four years.
TOPIC SURVEY

Please circle the number that most clearly reflects your views on senior comprehensive exams.

In my opinion, instituting required senior comprehensive exams at UCF is...

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Source of message: Chancellor's office

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Instructions

This questionnaire contains statements about arguing controversial issues. Indicate how often each statement is true for you personally by placing the appropriate number in the blank to the left of the statement.

If the statement is:

almost never true = “1” in the blank.
rarely true = “2” in the blank
occasionally true = “3” in the blank
often true = “4” in the blank
almost always true = “5” in the blank

1. While in an argument, I worry that the person I am arguing with will form a negative impression of me.

2. Arguing over controversial issues improves my intelligence.
almost never true  = "1" in the blank.
rarely true       = "2" in the blank
occasionally true = "3" in the blank
often true        = "4" in the blank
almost always true= "5" in the blank

3. I enjoy avoiding arguments.
4. I am energetic and enthusiastic when I argue.
5. Once I finish an argument I promise myself that I will not get into another.
6. Arguing with a person creates more problems for me than it solves.
7. I have a pleasant, good feeling when I win a point in an argument.
8. When I finish arguing with someone I feel nervous and upset.
9. I enjoy a good argument over a controversial issue.
10. I get an unpleasant feeling when I realize I am about to get into an argument.
11. I enjoy defending my point of view on an issue.
12. I am happy when I keep an argument from happening.
13. I do not like to miss the opportunity to argue a controversial issue.
14. I prefer being with people who rarely disagree with me.
15. I consider an argument an exciting intellectual challenge.
16. I find myself unable to think of effective points during an argument.
17. I feel refreshed and satisfied after an argument on a controversial issue.
18. I have the ability to do well in an argument.
19. I try to avoid getting into arguments.
20. I feel excitement when I expect that a conversation I am in is leading to an argument.
APPENDIX B

Tuition Increase
Control Group Message
Please take a few minutes to read the following information concerning tuition increase and answer the survey questions that follow.

PROPOSAL TO INCREASE TUITION AT UCF

The University of Central Florida is considering a tuition increase. The Chancellor of the university system has offered the following considerations to be taken under advisement. A decision on the increase in tuition is expected to be reached by September, 1995. If implemented, the tuition increase would take effect Spring 1996.

A tuition increase is sought to provide improvements to the UCF library system, hire more faculty, offer more classes, and build additional facilities. In order to provide these additional services to the student the increase in tuition would amount to 3% per credit hour for Florida residents and 5% per credit hour for non-residents. At the current fee schedule that would mean a $1.71 increase per credit hour for Florida residents and $11.03 increase per credit hour for non-residents taking undergraduate level classes.

A study conducted at the University of North Carolina found universities that increased tuition by 3% were able to improve their library systems significantly. Those schools that increased tuition at a 3% rate improved their library systems by 3,000 - 5,000 periodicals and books per year. Schools who had been reluctant to increase tuition were found to only be able to improve their library systems by 250-500 books per year.
The National Teaching Board revealed that, at schools where tuition was increased every three years, the number of faculty per student remained stable over the three year period. In schools that only increased tuition every five to eight years, the number of faculty per student greatly decreased over that period as more students enrolled, but fewer faculty were hired due to the limited available funds set aside for teaching staff. The NTB found, as more students enrolled, classes tended to be overfilled with many students not able to complete their degree in four years.

The National Faculty Association recommends that the University of Central Florida raise tuition by three percent in order to hire one more faculty member per college. The University of Central Florida has five colleges which include Arts and Sciences, Business Administration, Education, Engineering, and Health and Public Affairs. This recommendation would provide the university system with an additional 20 classes. After looking at faculty-to-student ratios, each college would decide whether to offer new courses or provide additional classes for already existing courses.

Finally, additional tuition would provide funding to create new facilities such as improved computer labs, a larger auditorium, and additional parking. The University has a list of needed improvements, but with the current inflation these improvements have been put on hold until additional funding is obtained. An increase in tuition would provide the much-needed funding for these areas.

In an effort to provide improvements to the UCF library system, hire more faculty, offer more classes, and build additional facilities the University of Central
Florida is seriously considering increasing tuition. The benefits of increasing tuition are great for both the student, the faculty and the university. A final decision will be made September, 1995 with implementation of the increase, if approved, taking place Spring 1996.
REFERENCES


