This is to certify that the

dissertation entitled

Response to Persuasive Message from Ingroup and Outgroup Source in Two Cultures: Taiwan and the United States

presented by

Maria Knight Lapinski

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Communication

Major professor

Date 1 August 2000

RESPONSE TO PERSUASIVE MESSAGES FROM INGROUP AND OUTGROUP SOURCE IN TWO CULTURES: TAIWAN AND THE UNITED STATES

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment for the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Communication

2000

ABSTRACT

RESPONSE TO PERSUASIVE MESSAGES FROM INGROUP AND OUTGROUP SOURCE IN TWO CULTURES: TAIWAN AND THE UNITED STATES

By:

Maria Knight Lapinski

There is extensive research in the United States that suggests we are likely to form groups with similar others. Over time, our attitudes become more similar to those of our fellow group members. Typically, we are more persuaded by messages that originate from members of our ingroup than by messages from an outgroup member. Under some conditions, however, such as when the source of the message is individuated, outgroup members are as persuasive as ingroup members. Because many social scientific theories have been tested exclusively in the United States, little is known about the persuasive power of ingroup or outgroup sources in cultures other than the United States. Theorizing regarding the individualistic and collectivistic dimensions of culture and social identity provide the rationale for the current study. There is reason to believe that because of the emphasis placed on ingroup/outgroup distinctions in collectivist cultures, such as Taiwan, the persuasive power of the ingroup will be even stronger and messages from outgroup members will be less persuasive than in individualistic cultures, such as the United States. The current study employs a 2x2x2x2 independent groups design to test the effects of message source, individuation, message strength, and individualism-collectivism on attitudes and behavioral intent. The results of this study indicate that the data are not consistent with the hypothesized relationships, but that a message by individuation interaction exists.

To A.C.L.

ACKNOWLEDGEMENTS

There are many people who have helped me throughout the process of completing my doctorate. Although it is impossible to acknowledge everyone who has helped me in some way, there are several people without whom I could not have made it through this process.

First, would like to thank Dr. Franklin J. Boster, my major professor, for showing me "the way".

I would like to thank my committee members: Dr. Jim Dearing, Dr. Stan Kaplowitz, and Dr. Kim Witte. They provided many insights into this project and mentorship throughout my program. I have thoroughly enjoyed working with each one of them.

I am very grateful to the faculty and students in the Department of Communication. They, along with my committee members, have been like a family to me. I would especially like to acknowledge faculty members Tim Levine, Sandi Smith, and Ron Tamborini (my bowling partner) for their support. The graduate students who could "feel my pain" made the whole process worthwhile (and often fun?!) including: Monique Mitchell, Craig Hullett, Dana Mastro, Rie Ohashi, Shelly Campo, and Victoria Orrego. Special thanks to LiFang Yang and Chi Wai Lee for their help with translation and for teaching me about Chinese culture.

Thank you to the outstanding Department of Communication staff: Marge, Deb, Kathy, and Ann – you're the one's who make the department tick. Marge, thanks for letting me (and the rest of the department) come whine to you. You're a rock.

A special thank you to Dr. Wen-Ying Liu, my colleague and friend, for all of her help throughout the process of conceptualization, instrument development, and data collection. I couldn't have done it without you. Xie Xie Nin.

The support of my parents, Jack and Nancy Lapinski, has been invaluable throughout my academic career. They have always believed in me even when I didn't believe in myself.

To my sister Natasha, who is completing her Master's thesis as I complete my dissertation, thank you for all of the late night procrastination calls. Believe me, I understand. I'm very proud of you.

Finally, I would like to thank my husband Andrew Christian LaFaive for his unfailing support and encouragement throughout this process. He has taught me the meaning of unconditional love. I think it was the lucky rubs that did the trick. I love you Kissy.

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INTRODUCTION

The influence of groups on member attitudes has been well documented in the United States. Under many conditions messages received from ingroup members are more persuasive than those from outgroup members. The cultural dimension of individualism and collectivism suggests that this finding is not universal, but that the degree to which, and the conditions under which, group members influence individual attitudes varies from culture to culture. The purpose of this study is to test the influence of messages from ingroup members, message strength, and individuation of source on attitudes about strengthening water pollution and conservation laws for people in Taiwan and the United States.

This manuscript will examine the literature regarding the influence of group membership on attitudes, the theoretical basis for this influence, and theories of cultural variability that suggest differences in the influence process for persons from Taiwan and the United States. Several hypotheses will be presented, as well as a method for testing these hypotheses. Finally, the results of the experiment designed to test these predictions will be reviewed and discussed, along with a discussion of its limitations and implications for future research.

CHAPTER 1

LITERATURE REVIEW

Typically, we form groups with others who have attitudes similar to our own (Byrne, 1971; Newcomb, 1953). Forming groups with similar others occurs commonly because it allows us to maintain cognitive consistency (Festinger, 1957; Newcomb, 1953), serves to reinforce our own attitudes (Byrne, 1971), and facilitates communication. Moreover, conformity pressures that arise during social intercourse result in group members becoming more similar to one another as the duration of group membership increases (Asch, 1952; Crutchfield, 1955; Festinger, 1950).

Many scholars have noted that these intragroup pressures are particularly effective in producing group member homogeneity (Sherif, Harvey, White, Hood, & Sherif, 1961). Generally, scholars have focused on the effect of conformity pressures such as compliance (e.g., Asch, 1952), legitimization (Milgram, 1974), and identification (e.g., Kelman, 1961, Siegel & Siegel, 1957). These studies suggest that people typically modify their actions in response to real or imagined normative pressures from group members.

Researchers have also examined the process of persuasion as a source of intragroup influence. These studies indicate that under a variety of conditions messages produced by an ingroup member are more persuasive than those produced by outgroup members (Allen & Wilder, 1978; Clark & Maas, 1988; Mackie, Worth, & Asuncion, 1990; McGarty, Haslam, Hutchinsom, & Turner, 1994; Wilder, 1990).

Researchers of group processes often consider ingroups as consisting of "two or more individuals who share a common identification" (Turner, 1982; p. 15). Membership in a particular group or category can be defined in terms of subjective

perception of membership in a given category (Mackie et al., 1990; Turner, 1982). Out-groups are those groups with which one does not identify (Jackman & Senter, 1980) or does not claim membership. Ingroups can include (but are not limited to) workgroups, family, school groups, and political or religious groups (Gudykunst, Yoon, & Nishida, 1987). When the state is threatened, the state can also be considered an ingroup (Triandis, 1989).

Groups can be distinguished in terms of the extent to which members interact with those from other groups and the extent to which they are naturally occurring as opposed to deliberately designed (McGrath, 1984). That is, some groups, such as social groups, may form based on interpersonal attraction among group members. Other groups, such as organizational groups, are formed deliberately to pursue a specific goal. In some cases, researchers may deliberately form groups for the sole purpose of examining the ways in which these artificially created groups function. Similarly, some groups may have members that are more likely to interact with outgroup members (e.g. a member of a friendship group interacting with persons from another friendship group) than members of other groups (e.g. members of two different organizational groups are less likely to interact or anticipate interaction with one another). Researchers of the persuasive impact of group member messages have commonly employed groups with minimal interaction among group members and between ingroups and outgroups in experimental designs (e.g. Mackie et al., 1990; Wilder, 1990).

The ingroup most frequently invoked in social scientific experiments is that of university affiliation (e.g. Mackie et al., 1990). Other researchers have created ingroups and outgroups by randomly assigning participants to each group (e.g. Abele & Petzoid,

1996; Wilder, 1990) and fostering group identification. Group identification and perceived similarity are often measured as proxy for the extent to which one believes a particular person is an ingroup member (Wilder, 1990). Specifically, one should identify more strongly with ingroup members than outgroup sources, and perceive oneself as more similar to ingroup than outgroup members. Under most conditions, it is clear that the perception that a source is an ingroup member yields considerable attitude change.

Ingroup persuasive messages are more effective than outgroup messages when social categorization is salient (McGarty et al., 1994), when the source is perceived as consistent (Allen & Wilder, 1978), and the source is highly credible (Clark & Maas, 1988). In an attempt to understand the processes that underlie this phenomenon, scholars have examined the factors that mediate the impact of ingroup persuasive messages on attitude change.

A program of research conducted by Mackie and her associates (Mackie et al., 1990; Mackie, Gastardo-Conaco, & Skelly, 1992) focussed on the processes that occur when one receives a persuasive message from an ingroup or outgroup member. These experiments examined the effectiveness of persuasive messages for topics that were relevant to the ingroup, and that were attributed either to ingroup or outgroup sources. Ingroup and outgroup were experimentally induced by varying the source of the message identified as either a student from the participant's university or another university. Mackie et al. (1990, Study 1) found that participants were most persuaded when they received a strong message from an ingroup member. There was less persuasion when the ingroup member's message was weak or when the message was attributed to an outgroup source. Additionally, participants recalled more arguments from the message when it was

attributed to an ingroup as opposed to outgroup source, suggesting participants were more carefully processing arguments from the ingroup source than those from the outgroup source (Mackie et al., 1990).

Similarly, Mackie et al. (1992) found that when people receive a message from an ingroup as opposed to outgroup source they take longer to process the message and tend to be more persuaded by strong than weak arguments. This research also indicates that prior knowledge of an ingroup source's attitudinal position results in acceptance of the ingroup position, regardless of message quality, and that a message from an outgroup source produces little attitude change (Mackie et al., 1992).

In a partial replication and extension of the Mackie et al. (1990) experiment, Wilder (1990) examined the conditions under which ingroup and outgroup sources are persuasive. In Experiment 1, groups were created by the experimenter and group identification was fostered by providing group emblems and banners. In Experiment 2, university affiliation of the source was varied consistent with Mackie et al. (1990). This research demonstrated that ingroup sources are indeed more persuasive than outgroup sources, but also reported that when outgroup sources were individuated they were as persuasive as ingroup sources. Individuating the source of a message involves viewing the source of a message as independent from other group members. That is, the individual characteristics of a communicator are made more salient than group characteristics (Wilder, 1990). In the Wilder study (1990; Experiment 3), individuation was experimentally induced by providing participants with minimal information about the source of the message (either ingroup or outgroup member). This information included name, hometown, and major area of study. Research on familiarity and belief complexity

(e.g. Linville, 1982) suggests that the more information one has about the source of the message, the more persuasive that source should be.

Other studies examining the impact of individuation indicate that responses to individuating information are moderated by the valence of that information (e.g. Abele and Petzoid, 1996). Ingroup members described with negative individuating information are evaluated less negatively than those for whom no group membership was identified and the same negative individuating information was provided. That is, when compared with others about whom no group membership information is given, negative information about ingroup members typically results in enhancement of ingroup qualities. Conversely, positive information about the outgroup leads to devaluation of outgroup members more so than for those for whom no categorization information was provided (Abele & Petzold, 1996). Thus, the research on individuation of source indicates that an outgroup source can be persuasive when individuated and that the valence of that information is important for judgements about the source.

Scholars typically proffer several explanations of the findings for the persuasive appeal of ingroup members and individuated outgroup members. The findings are consistent with classical theories of ingroup-outgroup homogeneity that describe the ways in which we categorize members of social groups (e.g. Allport, 1954). According to this explanation the source of intragroup influence comes from the fact that "people organize and make attributions about ingroup messages differently from the same information emanating from an outgroup" (Wilder, 1990, p. 1212; see also Asch, 1952).

This perspective, termed social identity, or social categorization, theory (Tajfel & Turner, 1979; Turner, 1982) suggests that persons organize the social environment to

provide a stable sense of self and to maintain a positive self-image. To facilitate self-maintenance, people use the source to interpret the content of the message. Messages from one's ingroup members are likely to be encoded by characteristics more specific than group membership – that is, one cannot distinguish oneself from other ingroup members simply on the basis of group membership, so one looks for more specific distinguishing characteristics. One then categorizes the messages one receives by some specific characteristic of the ingroup member.

The ingroup/outgroup distinction, however, makes group membership salient by promoting a distinction between one's own identity and that of members of the outgroup. Therefore, messages from outgroup members do not have to be differentiated from one another and messages can be stored in the broad "outgroup" category. Indeed, a significant body of research indicates that in most cases, outgroup members are viewed as relatively homogenous as compared to ingroup members (Allport, 1954; Linville & Jones, 1980). Due to the perceived heterogeneity of ingroup members, messages from the ingroup members are viewed as unique and more persuasive (Wilder, 1990). Consistent with research by Harkins and Petty (1987), this explanation suggests that messages from an ingroup source are viewed as independent from those generated by other ingroup members and therefore messages coming from this source are persuasive. Because outgroup messages are placed into a broad category based on group membership, the source of the message is not viewed as independent of the group unless the receiver is given information to allow for more specific categorization of the source (e.g. individuating information). Providing participants with individuating information about the outgroup source ensures that the source appears to be more independent than a source

who is identified with a group. Thus, the individuated outgroup source is more persuasive than a source about whom no individuating information is provided (Abele & Petzold, 1996; Wilder, 1990).

Not inconsistent with the social identity approach is the message-processing based explanation (Chaiken, 1980, 1987; Petty & Cacioppo, 1981, 1984; Petty, Cacioppo, & Goldman, 1981) for these findings offered by Wilder (1990), Mackie et al. (1990, 1992) and others. Mackie et al. (1990, 1992) suggested that ingroup message processing tended to be content-focussed as evidenced by more time spent reading ingroup messages and more recall of message arguments. Conversely, messages attributed to outgroup members result in little or no processing as evidenced by the fact that responses do not differ in the strong and weak message conditions. (Mackie et al., 1990). People may view ingroup messages as more important than outgroup messages and therefore attend to and organize the information in these messages more carefully (Mackie et al., 1990). That is, either because persons believe ingroups are more relevant and important than outgroups (based on past experience) or because people identify with the ingroup members, people spend more time encoding ingroup messages. Wilder (1990) suggests that because people spend more time encoding ingroup messages these messages are examined more carefully and therefore strong messages result in informational influence. Although Wilder's (1990) study yields little evidence to substantiate the claims of the message processing based approach, he suggests that this approach offers a viable interpretation of his data.

This conjecture is a result of observing people who reside in a culture that is predominately individualistic, specifically from the United States. The external validity of these results are questionable, however, because there is reason to believe that cultural

differences might moderate the relationships reported by Mackie et al. (1990) and Wilder (1990). Specifically, the extent to which these findings apply in collectivist cultures is a matter demanding close scrutiny.

Collectivism-individualism is a dimension employed commonly for the purpose of distinguishing cultures (e.g. Hofstede, 1980; Hui & Triandis, 1986; Triandis, 1989). Similarly, Triandis (1989) and others (e.g. Markus & Kitiyama, 1991; Sampson, 1985, 1988) have discussed the concept of individualism and collectivism at the level of the individual. These individual-level distinctions, termed ideocentrism-allocentrism (Triandis, 1989) or independent-interdependent self-construal (Markus & Kitiyama, 1991), are said to correspond to and be influenced by, cultural-level dimensions. An ideocentric self predominates in cultures that are more individualistic, whereas an allocentric self is more common in areas that are culturally collectivistic. The conceptualizations of the individual-level variables correspond directly to the cultural level variables. For the current paper, which predicts differences based on culture, the cultural level distinctions will be the focus of discussion.

The dimension of individualism-collectivism explains the ways in which individuals in different cultures see the self in relation to others, specifically to members of ingroups. For those in collectivist cultures individual goals are subordinate to ingroup goals. Collectivists emphasize ingroup-outgroup boundaries more than individualists. Ingroups tend to be stable in collectivist cultures and people will remain a part of an ingroup even if that group makes extensive demands on the individual (Triandis, Botempo, Villareal, Asai, & Lucca, 1988). Indeed Triandis (1989) suggests, "Collectivists automatically obey ingroup authorities and are willing to fight and die to

maintain the integrity of the ingroup, whereas they distrust and are unwilling to cooperate with members of the outgroup" (p. 509). Many regions in Asian and African, among others (e.g. Poland; Cialdini, Wosinska, Barnett, Butner, & Gornik-Durose, 1999) have been classified as predominantly collectivistic cultures (Hofstede, 1980, Triandis et al., 1988).

Personal goals are superordinate in individualistic cultures. These cultures allow for more fluid boundaries between ingroup and outgroup members. Ingroups are less stable in individualist cultures than they are in collectivist cultures and people tend to have a larger number of ingroups (Triandis et al., 1988). Regions including parts of Europe, Australia and the United States, among others, have been classified as individualist.

Although individualism-collectivism has been measured by a number of different scales (see Triandis & Gelfand, 1998 for a review), recent revisions and refinements have led to the development of a scale that combines the best items from existing scales and incorporates the concepts of horizontal and vertical collectivism and individualism. The horizontal and vertical addition to the conceptualization of individualism-collectivism deals explicitly with the importance of status for those in a given culture. Those who are horizontal individualists, although emphasizing the individual, are not interested in achieving high status (Triandis & Gelfand, 1998). Those who are vertical-individualists are interested in acquiring status via direct competition with others. Triandis and Gelfand (1998) suggest that vertical collectivists support competition at the group, but not the individual level. Finally, horizontal collectivists see themselves as

similar to others with little desire for competition. Central to each of these concepts is the notion of ingroups and outgroups.

Triandis (1989) suggests that there are a number of group-related factors that must be considered in order to understand the impact of individualism-collectivism on social behavior. Such factors include the number of ingroups, the extent of the influence of each group, and the depth of influence of each group. Because members of individualistic cultures tend to have a relatively large number of specific ingroups, each ingroup exerts relatively less influence on individual behavior. Collectivists, on the other hand, have a small number of ingroups and the influence of each group is substantial. Typically, in collectivist cultures ingroups tend to be small (e.g., family or school group), whereas in individualist cultures, they tend to be large. For collectivists, these ingroups tend to be ordered hierarchically in terms of influence (Triandis, 1989).

The sharp distinction between ingroup and outgroup members in collectivist cultures has been examined in several studies, some of which used social categorization theory as a basis for predictions (e.g., Brown et al., 1992; Hinkle & Brown, 1990; Lee & Ward, 1998). This research suggests that allocentrics, the individual-level manifestation of collectivism addressed previously, exhibit more positive attitudes toward the ingroup and more negative attitudes toward the outgroup than ideocentrics (Lee & Ward, 1998) Similarly, ingroup identification is more apt to occur in collectivist cultures (Brown et al., 1992).

Research on ingroup/outgroup attributional biases indicates that collectivists engage in more derogation of outgroup members and have stronger intergroup biases than members of individualist cultures (Al-Zahrani & Kaplowitz, 1993). Collectivists are

likely to exhibit a group-serving attributional bias (Bond, Hewstone, Wan, & Chiu 1985) and typically make more negative attributions about outgroup members' behaviors (Bond et al., 1985; Bond, Chiu, & Wan, 1984).[1] In collectivist cultures persons report having greater attributional confidence in ingroup members than outgroup members (Gudykunst & Nishida, 1986).

There is also evidence to indicate that collectivists perceive communication with outgroup members to be an arduous process. Gudykunst, Yoon, and Nishida (1987), in a test of social penetration theory, found people in collectivist cultures perceive more difficulty interacting with outgroup members than those in individualistic cultures and that the communication with outgroup members was less personalized and synchronized (Gudykunst et al., 1992).

This research indicates that for collectivists communication with outgroup members is typically more difficult, and generally results in more negative attributions about outgroup members than for those in individualistic cultures. There is little direct empirical evidence for the persuasive impact of ingroup members in collectivist cultures. Hui and Triandis (1986), in their survey of cross-cultural researchers, found that researchers believe collectivists would be more susceptible to influence by ingroup members than individualists and suggested that collectivists will attend to the influencing agent more than individualists. This prediction has not been tested.

Because of the importance of the ingroup relative to the outgroup for members of collectivist cultures, the same argument is likely to be perceived as stronger if it is attributed to an ingroup source than if it is attributed to an outgroup source (cmp. Asch, 1952, Wilder, 1990). Furthermore, individuating information about a message source,

although likely to be recalled, is unlikely to provide a compelling cue that results in listeners conforming to message recommendations. Instead, it is likely to be perceived as irrelevant to the attitude judgment, the source's ingroup-outgroup status being a more salient cue, and hence, a stronger causal factor. Thus, it is reasonable to expect that collectivists will be less persuaded by persuasive messages attributed to outgroup sources, even if those messages contain strong arguments and the sources are individuated. Moreover, because of the effect of the ingroup-outgroup status of the source on perceived argument strength, it is reasonable to expect that collectivists will be more persuaded by persuasive messages attributed to ingroup sources than messages presented by outgroup sources, even if the arguments in the message are weak.

Based on previous research by Mackie et al. (1990) and others (e.g. Chaiken, 1980; Petty & Cacioppo, 1981, 1984; Tasaki, Kim, & Miller, 1998) it is possible to predict the ways in which people will respond to persuasive messages. Mackie et al. (1990) cited the fact that participants in the strong message condition produced more message-related thoughts and recalled more arguments as evidence that messages from ingroup members are given more scrutiny. This message-based thinking then led to greater persuasion in the strong message condition (Mackie et al., 1990). The research on people with differing cultural orientations suggests that this phenomenon may also vary across cultures.

Although Tasaki, Kim, and Miller (1998) induced involvement as opposed to varying message strength, they found that persons with higher interdependent self-construal (predominant in collectivist cultures) engaged in more source-based processing across conditions. Additionally, they found that relative attitude change was greater for

those with interdependent self-construal than those with independent self-construal, if the source had high status. That is, contrary to the findings of Mackie et al. (1990) and others, it was not message-based processing that led to greater attitude change for those who are more interdependent, but characteristics of the source. Thus, one would expect that those who are more collectivistic should be more likely than those who are more individualistic to recall characteristics of the source.

Additionally, Johnson and Eagly (1989) demonstrated the importance of involvement in their meta-analysis of the effects of involvement on attitude change. Involvement is the "motivational state induced by the association between an activated attitude and some aspect of the self," (Johnson & Eagly, 1989; p.293). One type of involvement, outcome-relevant involvement, deals with the salience of an issue given an individuals' existing goals or desired outcomes. Johnson and Eagly's (1989) meta-analysis indicated that high levels of outcome involvement increases persuasion for strongly argued messages and reduces persuasion for weakly argued messages. Thus, it is desirable to employ topics about which both collectivist Taiwanese and individualist United States participants exhibit similar levels of involvement. For this reason, the messages in the current experiment were piloted to assess levels of outcome involvement in both Taiwan and the United States and to determine if levels of involvement are similar and relatively high in both countries.

An experiment was designed to test several predictions. It employed a 2 (ingroup/outgroup source) X 2 (individuated/non-individuated source) X 2 (strong/weak message) X 2 (individualist/collectivist) independent groups design with attitudes and behavioral intentions as the dependent variables. Persons in Taiwan and the United States

were given the source inductions and either a strong or weak message regarding strengthening water quality laws. This issue was chosen because it was found to be involving for persons from both countries.[2] Taiwan was selected because persons from this country are generally highly collectivistic (Hofstede, 1980). Thus, Taiwanese should exhibit higher levels of horizontal and vertical collectivism than participants from the United States. Conversely, the United States is considered highly individualistic (Hofstede, 1980). Participants from the United States should exhibit greater levels of horizontal and vertical individualism than participants from Taiwan.

For Taiwanese/collectivists, an interaction is predicted between group status and message strength such that more attitude change occurs when an ingroup member presents a strong message than when a weak message is presented, but little attitude change occurs when an outgroup member presents either a strong or weak message. Additionally, there will be a main effect for group status such that the ingroup source will always be more persuasive than the outgroup source. There will be no effect for individuation for Taiwanese/collectivist participants because the source's group status will be more salient than the individuating information. That is, inconsistent with Wilder (1990) an individuated, outgroup source will not be anymore persuasive than the non-individuated outgroup source.

For individualists/United States participants, a three-way interaction is predicted between in/outgroup source, individuation, and message strength such that in the strong message condition, an ingroup source is more persuasive than an outgroup source, unless that source is individuated. An individuated, outgroup source should be as persuasive as an individuated or non-individuated ingroup source. A strong message from a non-

individuated, outgroup should be less persuasive. In the weak message condition, participants will be less persuaded than in the strong message condition, and will again exhibit the least persuasion in the non-individuated, outgroup source condition. The contrast coefficients for the predictions discussed above are presented in Table 1.

CHAPTER 2

METHOD

Participants

Participants in the experiment included 158 students at Shih Hsin University in Taipei, Taiwan and 237 American students from Michigan State University. The participants from Taiwan were 76% female, and the average age of participants was 20.43 (SD = 2.14). Participants from United States were 59% female, with a mean age of 19.45 (SD = 1.63). The differences in the proportion of females from each country was significant [χ^2 (1) = 12.00, $p < .05$, r = .17] with the Taiwanese sample having a greater proportion of female participants. Similarly, the differences in mean age between Taiwanese and United States participants was significant [t (393) = 4.89, $p < .05$, r = .24]. [3] The Taiwanese participants were significantly older than participants from the United States.

Procedure

Each participant was assigned randomly to the experimental conditions in a 2 (ingroup/outgroup source) X 2 (individuated/non-individuated source) X 2 (strong/weak message) X 2 (individualist/collectivist) independent groups design.

Upon entering the laboratory, participants received a questionnaire containing a pretest assessment of attitude and behavioral intentions on the issue of strengthening clean water laws. Immediately following the attitude scale they received the ingroup/outgroup induction crossed with the individuation induction.

After reading the source description, participants read either strong or weak arguments in a message described as the text of a speech given by a student leader. Next, they completed several items assessing the quality of the message induction. Participants then completed a check of individualism/collectivism, post-test attitude and behavioral intent items, and items assessing basic demographic information. Finally, participants were asked to list characteristics of the source of the message and were debriefed.

Message Design.

Messages were designed by the author and a Taiwanese collaborator. Both the strong and weak message contained arguments for increased clean water legislation. The strong messages contain valid arguments and strong evidence for the premises. This message is presented in Appendix A. The weak messages contain logical errors and weak evidence for the premises. The weak message is presented in Appendix B. Both messages contained the same explicit conclusion ("Our country must implement stronger laws to protect the quality of our freshwater supply."). All versions of the message were approximately one page in length, single-spaced, and took respondents approximately four minutes to read. The weak message contained 552 words and the strong message contained 520 words. The messages for the Taiwanese sample were translated and back-translated by independent Mandarin-speaking collaborators.

The messages were pilot tested to assess Taiwanese and American participants' perceptions of argument strength. The pilot test included 83 participants from the United States and 85 from Taiwan. The initial pilot resulted in substantial modifications to the messages and scale items. The final messages were tested to determine the effectiveness of the message strength induction. A one-tailed t-test indicated that in the United States, the strong message (Mean = 4.03; SD = .53) was perceived as significantly stronger than the weak message (Mean = 3.72; SD = .77) [t (81) = 2.11; p = .038; r = .23]. Similarly, in Taiwan the strong message (Mean = 3.64; SD = .65) was perceived as stronger than the weak message (Mean = 3.30; SD = .53) [t (83) = 1.88; p = .05; r = .20]. The effects for message on perceptions of message strength are comparable in size to those found in previous research on the impact of message strength on attitudes. [4]

Independent Variables

Message Strength. The strength of the arguments presented in each message were evaluated with six Likert-type items assessing perceptions of message strength on a 5-point response scale anchored with "strongly disagree" and "strongly agree". Higher scores indicate greater perceived message strength. The scale included items such as "The message I read was compelling" and "The message I read presented very strong arguments." Items assessing message strength are presented in Appendix C.

Individuation. Individuation was induced in the same fashion as Wilder (1990) in which participants were given either some information or no information about the group member presenting the message. Individuating information included information not relevant to message content about the source's hometown, major, and name. The non-individuation condition participants were given no such information. As a check for the

individuation induction participants in all conditions were asked to recall information about the source. This recall task was a one-item open-ended assessment. As a check of the individuation induction, this free-response measure was coded as either containing correct individuating information about the source, containing incorrect individuating information about the source, or no response. To be coded as "correct" the response had to include at least one piece of accurate individuating information (e.g., the source's name).

Ingroup/Outgroup. For participants in the United States, the person serving as the ingroup source was from Michigan State University and the outgroup source was from the University of Colorado. For Taiwanese participants, the source of the message was either be a student at Shih Hsin University (ingroup source) or Ping Dong Technical College (outgroup source), both in Taiwan. The effectiveness of the source induction was assessed with the same one item measure used to assess the individuation induction discussed above. The open-ended responses were coded as either correct (i.e., containing any information about the group status of the source), incorrect (i.e., containing wrong information about group status), or no response.

Individualism/Collectivism. Individualism/collectivism was assessed with Singelis and Triandis' (in Triandis, 1995) horizontal and vertical individualism and collectivism scale. This scale contains 32 Likert-type items ranging from 1 = Strongly Disagree to 5 = Strongly Agree such as, "When I succeed it is usually because of my abilities" and "I feel good when I cooperate with others." Eight items measured each dimension. The scale is presented in Appendix D.

Dependent Variables

Attitude. Participant attitudes on the message topic were assessed on an eight-item Likert-type scale (1=Strongly Disagree to 5=Strongly Agree) with higher scores indicating greater agreement with message recommendations. This scale included items such as: "I think enacting new laws to protect drinking water in the United States (or Taiwan for Taiwanese participants) is a good idea" and "Stronger laws protecting United States (Taiwan's) freshwater sources are not necessary." The attitude items are presented in Appendix E.

Behavioral Intent. The likelihood that participants would engage in behaviors related to the issue were assessed with a four item Likert-type scale including items such as "I would sign a petition supporting stronger water protection laws" and "I would attend a rally in support of stronger water protection laws." The 5-point scales were anchored with "strongly disagree" and "strongly agree" and higher scores indicated more agreement with message recommendations. The behavioral intent items are presented in Appendix F.

CHAPTER 3

RESULTS

Measurement Models

Confirmatory factor analyses were performed to test the construct validity of each scale. Tests for internal consistency and parallelism were conducted separately to examine the relationship between predicted and observed relationships between items for both the Taiwanese and United States data.

In both Taiwan and the United States a five-item unidimensional solution was found for the attitude scale. The pretest attitude scale was found to be highly reliable in both the Taiwanese (Standardized Item $\alpha = .80$) and United States ($\alpha = .80$) data. The posttest attitude scale was also highly reliable in both countries ($\alpha = .87$ for both samples). In the United States, the pretest attitude scale had a mean of 21.81 (SD = 2.68) and the post-test scale had a mean of 20.99 (SD = 2.75). For the Taiwanese sample, the pretest attitude scale had a mean of 21.93 (SD = 2.47) and a posttest mean of 20.98 (SD = 2.85). The Taiwanese and United States pretest means are not significantly different from one another [$t(393) = .46$, $p > .05$, $r = .02$].

A three item behavioral intentions scale was also consistent with the unidimensional model. The pretest behavioral intent scale had a Standardized Item $\alpha = .71$ for the United States data, and an $\alpha = .67$ for the Taiwanese data. The posttest behavioral intent scale had an $\alpha = .80$ in the United States sample, and an $\alpha = .70$ in the Taiwanese sample. Analysis indicated that in the United States data the pretest behavioral intent scale had a mean of 9.47 (SD = 2.34) and the posttest scale had a mean of 9.59 (SD = 2.40). In the Taiwanese data, the pretest measure of behavioral intent had a

mean of 10.03 (SD = 2.14) and in the posttest had a mean of 10.11 (SD = 2.14). The Taiwanese and United States samples differed significantly on pretest behavioral intent scores [t (386) = -2.39, p = .017, r = -.12] with Taiwanese participants being more likely to report intent to engage in behaviors to promote strengthening clean water laws than participants from the United States.

Confirmatory factor analysis also indicated a four-item unidimensional solution for the message strength scale. This scale is reliable in both the United States data (α = .82) and Taiwanese data (α = .81). The scale had a mean of 15.37 (SD = 2.60) in the United States data and a mean of 14.02 (SD = 2.39) in the Taiwanese sample.

The Horizontal and Vertical Collectivism and Individualism Scale (Singelis & Triandis, in Triandis, 1994) consists of four factors. Analysis resulted in a four-item unidimensional solution for the horizontal-individualism scale. For both the United States and Taiwanese data the means, standard deviations, and alpha coefficients for each factor are presented in Table 2. A five-item unidimensional solution was produced for the horizontal-collectivism scale, vertical-individualism scale, and vertical-collectivism scale.

Induction Checks

Message Strength. To assess the effectiveness of the strong-weak message induction a 2 (individuated/non-individuated source) x 2 (ingroup/outgroup source) x 2 (Taiwan/United States) x 2 (strong/weak message) analysis of variance (ANOVA) was performed with the perceived message strength scale as the dependent variable. The analyses indicated a substantial main effect for message on perceived message strength such that the strong message (M = 15.54; SD = 2.29) was perceived as significantly

stronger than the weak message (M = 14.09; SD = 2.70) [F (1, 369) = 30.59, p=.001, η^2 = .08, r =.28]. There was also a significant main effect for country such that Taiwanese viewed both the strong message and weak message as weaker than those from the United States [F (1, 369) = 28.45, p= .00, η^2 = .06, r = .25].[4] These means are presented in Table 3. Analysis revealed an additional main effect for individuation on perceptions of message strength such that a message from an individuated source (M = 14.54; SD = 2.51) was perceived as weaker than a message from a non-individuated source [M = 15.12; SD = 2.67; F (1, 369) = 4.73; p = .03, η^2 = .01, r = .10]. Ingroup/outgroup status of the source did not impact perceived message strength [F (1, 369) = .20, p =.655]. There were no substantial interaction effects for the independent variables on perceptions of message strength.

Individuated/Non-Individuated. The single item assessment of the extent to which participants could recall the source of the message revealed that the individuation induction was effective. Of the Taiwanese subjects in the individuation condition (N = 84), approximately 24% of the participants recalled the induction correctly, 12% recalled it incorrectly, and 64% did not mention specific individuating information about the source. The proportion of Taiwanese participants correctly identifying the individuation manipulation differs significantly from zero [z=5.15, p < .05; 95% Confidence Interval (CI) =.15 - .33]. Similarly, the difference between those who recalled the induction and those who did not is significant (Δp= .12; z = 3.38; p < .05; 95% CI = .05 - .19). In the United States sample, of those in the individuation condition (N = 114), 51% recalled accurate information regarding the source, 10% recalled information inaccurately, and 39% did not recall specific information about the source. The proportion of participants

from the United States correctly identifying the individuation manipulation differs significantly from zero ($z = 10.89$, $p < .05$; 95% Confidence Interval = .42 - .60). The difference between those who recalled the induction and those who did not was also significant ($\Delta p = .41$; $z = 8.90$; $p < .05$; 95% CI = .32 - .50).

It was predicted that Taiwanese participants should focus more on qualities of the source than those from the United States, and should therefore be better able to recall information about the source of the message. Chi-square analysis of the data from the ingroup/outgroup induction check revealed that people from the United States were significantly more likely to mention the group information about the source of the message than those from Taiwan [χ^2 (2) = 18.98; $p = .001$].

Ingroup/Outgroup. For the ingroup/outgroup induction, 82% of Taiwanese participants did not mention group information about the source, 8% mentioned inaccurate information, and 9% mentioned the group status of the source. Of the United States participants, 65% did not mention information about the group status of the source, 7% mentioned inaccurate information, and 28% correctly recalled source group information. The United States participants were significantly more likely to recall specific individuating information about the source of the message [χ^2 (2) = 8.52; $p = .01$].

Individualism-Collectivism. To test the extent to which Taiwanese are more collectivist than individuals from the United States[5], a 2 (individuated/non-individuated source) x 2 (ingroup/outgroup source) x 2 (Taiwan/United States) x 2 (strong/weak message) ANOVA was performed on each of the horizontal and vertical individualism-collectivism scales. For the horizontal-individualism scale, the United States mean and

the Taiwanese mean differ significantly [F (1, 368) = 104.41, p = .001, η^2 = .21, r = .45]. Indicating that, as expected, participants from the United States tended toward greater horizontal-individualism than those from Taiwan. There were no other significant main effects for the other independent variables on horizontal-individualism. There was, however, a significant 3 way interaction for country, message, and group on horizontal-individualism [F (1, 368) = 10.40, p= .01, η^2 = .02, r = .14]. The character of this interaction was such that in the United States the strong message, ingroup condition contained persons higher on horizontal-individualism than in the strong message outgroup condition. In Taiwan this pattern was reversed with more horizontal-individualists in the strong message, outgroup source condition than in the strong message ingroup source condition. In every cell, the United States participants were higher on horizontal-individualism than the Taiwanese participants. The means for this effect are presented in Table 4.

The United States mean and the Taiwanese mean on the horizontal-collectivism scale do not differ significantly [F (1, 367) = .15, p = .70, η^2= .0004]. There were no other significant main effects or interaction effects for the independent variables on horizontal-collectivism. There was also no significant difference between the United States and Taiwanese means on the vertical-individualism scale [F (1, 369) = 1.16,p = .28 η^2 = .003], nor were there any other significant effects for the other independent variables on vertical-individualism. Analysis of the vertical-collectivism scale revealed that the Taiwanese mean differs significantly from the United States mean [F (1,368) = 23.59, p=.001, η^2=.06, r = .24] with Taiwanese having higher levels of vertical-collectivism.

This difference was in the expected direction. There were no other significant effects for the independent variables on vertical-collectivism.

Tests of Hypotheses

The hypotheses dealt with the impact of individuation, group status, and message strength on attitudes and behavioral intent. In order to assess change in attitudes from pretest to post test an attitude change scale was created by subtracting pretest attitude scores from posttest scores and summing across items. The attitude change scale had a reliability of $\alpha = .49$ in the United States and $\alpha = .63$ in Taiwan. Due to the unreliability of the change scores, analysis of covariance (ANCOVA) was performed with pretest attitude as the covariate and post-test attitude as the dependent variable. A 2 (strong/weak message) X 2 (ingroup/outgroup source) X 2 (individuated/non-individuated source) X 2 (United States/Taiwan) independent groups ANCOVA revealed a statistically significant message by individuation interaction [$F(1, 362) = 3.90$, $p = .049$, $\eta^2 = .01$; $r = .07$]. As indicated by the means in Table 5 the character of the interaction was such that in the weak message condition, the non-individuated source was more persuasive than the individuated source. In the strong message condition, the means were in the opposite direction. The individuated source was more persuasive than the non-individuated source. There was no main effect for country [$F(1, 362) = .32$, $p = .57$]. The predicted three-way interaction for group, message, and individuation in the United States was not significant [$F(1,218) = 2.59$, $p = .11$], nor was the predicted main effect for group in the Taiwanese data [$F(1,143) = .67$, $p = .42$]. In order to test of the predicted interactions among the independent variables on attitudes, contrast analysis was employed using the contrast coefficients provided in Table 1. These analyses revealed that these data are not

consistent with the predicted model [F (1, 373) = 3.17, p >.05, η^2 = .004, r = .06]. The complete contrast analysis is presented in Table 6. Thus, these data are not consistent with the hypotheses regarding the impact of the independent variables on attitudes.

To test the predictions regarding the impact of the in independent variables on behavioral intentions, a change scale was created by subtracting pretest behavior scores from post test behavior scores and summing across items. Similar to the attitude change scale this scale had low reliabilities (α =.20 in the US and α = .44 in Taiwan), thus an ANCOVA was performed with pretest behavioral intent as the covariate.

A 2 (strong/weak message) X 2 (ingroup/outgroup source) X 2 (individuated/non-individuated source) X 2 (Taiwan/US) independent groups ANCOVA with post-test behavioral intention scores as the dependent variable revealed a significant message by individuation interaction [F (1,362) = 7.30 p=.007, η^2 = .01; r = .08]. Examination of the means in Table 5 indicates a pattern similar to the means for the attitude scale. In the weak message condition, the non-individuated source was more persuasive than the individuated source. In the strong message condition, the individuated source was more persuasive than the non-individuated source. There was no main effect for country [F (1,362) = .003, p = .96]. In the Taiwanese data, the predicted main effect for group was nonsignificant [F (1, 145) = .00, p = .96]. The predicted three-way interaction for group, message, and individuation in the United States was also nonsignificant [F (1,218) = .44, p = .51]. As an additional test for the predicted interaction effects, a contrast analysis was performed with these data (see Table 1 for contrast coefficients). The data were not consistent with the predicted model [F (1, 376) = 3.65, η^2 = .003, r = .05]. Additional results from the contrast analysis are reported in Table 7.

CHAPTER 4:

DISCUSSION

The goal of this study was to extend and test the external validity of previous research regarding the impact of message strength, ingroup/outgroup, and individuated/non-individuated source on attitudes and behavioral intentions. The study was designed to test for a three-way interaction between these variables in the United States on both attitudes and behavioral intentions. These data are not consistent with these hypotheses, nor with previous research regarding the impact of source characteristics in the United States. Specifically, previous research indicated that an outgroup source is persuasive only when that source is individuated and that a strong message from an ingroup source is persuasive whether or not that source is individuated. The current examination found no effect for group and no group by individuation interaction.

A main effect was predicted for group source for those from Taiwan, such that the ingroup source was always more persuasive than the outgroup source. These data were not consistent with this prediction. There was no main effect for group evident in these data. The predicted group by message strength interaction was also not evidenced in these data. Additionally, it was predicted that Taiwanese should be more likely than participants from the United States to recall characteristics of the source. Chi-square analysis revealed that the data were not consistent with this prediction. Participants from Taiwan were actually less likely to recall characteristics of the source than participants from the United States.

These data do indicate an interaction effect for strong/weak message and individuated/non-individuated source on attitude. In the weak message condition the non-individuated source was more persuasive than the individuated source. In the strong message condition the individuated source was more persuasive than the non-individuated source. Put differently, source individuation can attenuate persuasion if a message is weak, but increase persuasion when the message is strong. These data indicate that this effect occurs regardless of the group status of the source or the cultural background of the participants. The message by individuation interaction effect occurred despite a somewhat weak message strength induction for both participants from the United States and Taiwan. Similarly, the group status of the source did not make a difference in subsequent attitudes.

The effects were similar for message and individuation on behavioral intent. In the weak message condition the non-individuated source was more persuasive than the individuated source. In the strong message condition the individuated source was more persuasive than the non-individuated source. Thus, it appears that for behavioral intentions, when the message was weak, being an individuated source actually detracted from the persuasive power of the source. That is, knowing specific information about the source of a message makes people less likely to comply with the recommendations in a weak message. If the message is strong, however, the individuated source will impact behavioral intentions more strongly than the non-individuated source. Again, these effects occur across culture and source. Put differently, neither the ingroup/outgroup status of source nor the cultural group of the participants impacted behavioral intentions.

Thus, these findings generalize across Taiwanese/collectivistic and United States/individualistic participants. There were no other effects approaching significance.

The message by individuation interaction could be attributable to a message strength magnification effect for the individuated source. That is, providing identifying information about the source of a message produces greater scrutiny of the message than providing little or no information about the source. In the case of a message containing weak, specious arguments, the message magnification effect produces less attitude change than if the message contains strong arguments.

It is important to note, however, that due to the complex design of this study, there is a possibility of 15 effects for the independent variables including four main effects, 6 two-way interactions, 4 three-way interactions, and 1 four-way interaction. Post-hoc Bonferroni correction indicates that in order to produce a family-wise error rate of $p = .05$, effects would have to be significant at the $p = .003$ level. The message by individuation interaction for both attitudes and behavioral intent is not significant at this level. Thus, this interaction could be due to sampling error.

These findings are particularly interesting given the data from the message strength induction check that indicated that across conditions, the message from the individuated source was perceived as weaker than the message from the non-individuated source. Although this effect occurred, in the strong message condition the individuated source still impacted both attitudes and behavioral intentions, and there was no main effect for individuation on attitudes. This suggests that the effects for message are particularly important. Wilder (1990) examined the impact of source individuation on

attitudes, but did not control for the effects of message strength, nor did he measure perceptions of message strength.

There are several limitations of the current study that might explain the inconsistencies between the hypotheses and the data. First, either the induction of ingroup/outgroup was relatively ineffective or the induction check measure was weak. Only a small percentage of the participants recalled group-related characteristics of the source. Following the data analysis reexamination of the questionnaires revealed that the Taiwanese questionnaire stated in the instructions that the questionnaire was from Shih Hsin University, the ingroup source. Because so few of the participants actually recalled group-related characteristics, however, this problem may be inconsequential. The current study employed an ingroup/outgroup manipulation that may not have been sufficient to produce change in participants from Taiwan. That is, although in the United States, non-interactive, deliberately designed groups have been used in previous research on this issue and produced significant results, these groups may not be salient for those in collectivist cultures. Other ingroups, such as family or social groups could be more likely to make ingroup/outgroup distinctions salient to those from collectivist cultures such as Taiwan.

The induction of group status used in the current study was the same in both content (i.e. university affiliation) and form (i.e. group status was mentioned once before participants read a message) as those which yielded significant attitude shifts in prior research (Mackie et al., 1990, Experiment 1; Wilder, 1990; Experiment 3). Many studies (e.g. Abele & Petzold, 1996; Mackie et al., 1990, Experiment 1; Wilder, 1990) did not report an induction check or recall measure for ingroup/outgroup affiliation, so it is not

possible to know if participants would have been able to recall information about group membership. Mackie et al., (1990) did report nearly 100% accuracy in participant recall of source cues in their second experiment, but their ingroup/outgroup induction (i.e., several visual and verbal cues indicating group status) was much more extensive than the inductions employed in both previous and current research. In this study, the use of a single item, open-ended measure to check the effectiveness of both the ingroup/outgroup and the individuation inductions, although better than no induction check, may be one reason that the induction appears to be weak.

Both the individuation and ingroup/outgroup inductions were not mentioned by the majority of the Taiwanese participants. These inductions faired better with the United States participants. There are several possible explanations for the failure of both inductions, especially in Taiwan. Specifically, the induction of these independent variables illustrates one of the major difficulties in collecting international data. The Taiwanese participants were far less likely to recall either of the inductions than participants from the United States. This suggests that there may have been language or translation problems with the survey. Although the questionnaires were translated and back-translated several times, it was difficult to find translators who understand the importance of accuracy required to do social scientific research. Similarly, the investigator does not have enough Mandarin proficiency to translate or back-translate questionnaires adequately. Unless the translator has participated in the study design the translator may not be cognizant of the inductions (especially in a complex design) and their critical role in the study design. It should be noted, however, that translation is obviously not the only problem with the inductions used in the current study; the results

of this study fail to replicate those of previous research conducted in English in the United States.

The problem of translation was also evident in the message induction. Although the message induction was effective in both Taiwan and the United States, the messages were seen as weaker in Taiwan. This may be a function of the translation of the messages or a cultural difference in the ways in which evidence and logic are perceived. It should be noted that these messages were piloted several times in an attempt to gain equivalence of message evaluation. In the pilot study, these messages were perceived as similarly strong and weak in by those from Taiwan and the United States.

Additional investigations of the variables examined in this study could employ multiple attitude domains when designing messages. In this case, the issue of water conservation is one that Taiwan and the United States perceive similarly in terms of outcome involvement, but there may be other factors that influence perceptions of messages on this topic (e.g., prevalence of messages on this issue in the media). On a related issue, future examinations of this type could employ messages that are highly counter-attitudinal. In the current study, attitudes toward the issue were primarily positive. In order to examine attitude change it is necessary both to choose topics for which there is likely to be significant change and develop reliable measures of change. Future research can address these needs.

The data also revealed mixed findings for the horizontal/vertical individualism-collectivism measure in the United States. This finding speaks to the importance of measurement in social science. The measurement of individualism and collectivism has historically given researchers difficulties. Indeed, in some disciplines these variables are

assumed, based on culture, rather than measured due to questionable validity and reliability of existing measures. Clearly there is variability within cultures on these variables. To the extent that a collective orientation may be related to perceptions of messages from an ingroup or outgroup source, future research issues should consider measurement of collectivism and individualism.

There are several related issues that merit investigation. First, many researchers have created groups as opposed to using naturally occurring groups as was done in this study. There are arguments for employing each of these inductions, but certainly a induction of ingroup and outgroup would be more effective if one was aware of the extent to which participants have and identify with other relevant ingroups. Ingroup/outgroup distinctions have been discussed extensively in the intercultural research, but few have examined which groups are the most relevant ingroups or outgroups. Perhaps the groups chosen for the present investigation are not the most salient, hence, not the most persuasive ingroups. Finally, it might also be the case that persuasion (i.e., attitude change) is not the primary means by which ingroup members in collectivist cultures gain conformity from group members. Other social influence forces such as compliance or conformity may be the primary mechanism by which group members become more similar over time. Thus, the extent to which messages from ingroup or outgroup members influence individual attitudes in cultures other than the United States remains an important area for additional research.

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Endnotes

1. There is at least one exception to these findings. Al-Zahrani and Kaplowitz (1993) found that Saudi's (collectivist) exhibit less ingroup bias for family members and persons of the same nationality than those from the United States (individualist).

2. The topic of water quality was chosen for the current study because it was believed participants would exhibit moderate to high outcome involvement. Level of outcome involvement in the issue was be examined with six Likert-type items on 5-point scales with higher numbers meaning greater involvement in the outcome. Items included: "The outcome of this issue directly affects my life." and "Whether or not new clean water legislation is enacted is important to my life." Pilot tests indicated that United States participants exhibit high involvement in the issue (Mean = 4.14; SD = .58) as do Taiwanese (Mean = 4.09; SD = .49). These means do not differ significantly from one another [t (128) = .45; p = .66; r=.04].

3. Subsequent analysis revealed no main effects for sex on either attitudes [F(1, 344) = .082, p = .77] or behavioral intent [F(1, 345) = .073, p = .78]. There were also no significant interactions for sex with the other independent variables. Additionally, age was not highly correlated with either the attitude scale (r = -.038) or the behavioral intentions scale (r = -.044).

4. Mackie et al., 1990 reported effect size indices of r = .17 and .42 in Experiments 1 and 2 respectively. These effects are within sampling error of the effects in the current study.

5. Historically, researchers have assumed a culture is collectivist or individualistic based on Hofstede's (1980) original classification of countries. This assumption has been made in part, due to problems with measurement of these variables.

TABLES

Table 1.
Contrasts for predicted relationships.

		Individualist United States			**Collectivist Taiwan**	
		Non Individuated	Individuated		Non Individuated	Individuated
Strong Mess.	Ingroup	1	1		1	1
	OutGroup	0	1		-1	-1
Weak Mess.	Ingroup	0	0		0	0
	Outgroup	-1	0		-1	-1

Table 2.
Means, standard deviations, and Standardized Item Alphas for the dimensions of the Horizontal and Vertical Individualism and Collectivism scale.

Dimension	**Mean**		**Standard Deviation**		**Alpha**	
Country	U.S.	Taiwan	U.S.	Taiwan	U.S.	Taiwan
Horizontal-Individualism	14.67	12.35	2.03	2.40	.45	.48
Horizontal-Collectivism	19.12	2.03	2.03	2.62	.60	.70
Vertical-Individualism	15.50	15.86	3.02	3.28	.72	.78
Vertical-Collectivism	17.25	18.49	2.50	2.44	.46	.53

Table 3.
Message strength induction check means (M) and standard deviations (SD) for Taiwanese and United States participants.

	Weak Message	**Strong Message**
Taiwan	M=13.49 SD=2.62	M=14.52 SD=2.04
United States	M=14.48 SD=2.70	M=16.23 SD=2.19

Table 4.
Means (M) and standard deviations (SD) for horizontal-individualism by the independent variables.

		Individualist United States			**Collectivist Taiwan**	
		Non Individuated	Individuated		Non Individuated	Individuated
Strong Mess.	Ingroup	M=15.28 SD=2.34	M=15.14 SD=2.37		M=11.56 SD=2.38	M=11.78 SD=2.35
	OutGroup	M=13.76 SD=2.21	M=14.36 SD=1.65		M=12.39 SD=2.30	M=13.48 SD=2.06
Weak Mess.	Ingroup	M=14.93 SD=2.28	M=14.41 SD=2.01		M=12.53 SD=2.37	M=12.68 SD=3.27
	Outgroup	M=14.82 SD=1.39	M=14.67 SD=1.75		M=12.18 SD=1.85	M=12.15 SD=2.25

Table 5.
Means (M) and standard deviations (SD) for the dependent variables by message type and individuation.

	Weak Message		Strong Message	
	Individuated	**Non-Individuated**	**Individuated**	**Non-Individuated**
Attitude	M=20.88 SD=2.65	M=21.14 SD=2.68	M=21.08 SD=2.80	M=20.79 SD=3.05
Behavioral Intent	M=9.35 SD=2.27	M=10.11 SD=2.01	M=10.06 SD=2.39	M=9.63 SD=2.41

Table 6.
Contrast analysis for effects of the predicted model on attitudes.

Source	Sum of Squares	df	Mean Squares	F	η^2	r
Model	12.24	1	12.24	3.17	.004	.06
Residual Explained Variance	1493.81	4	373.45	97.00	.50	.71
Within Subjects Error	1436.70	373	3.85			
Total	2942.75	378				

Table 7.

Contrast analysis for effects of the predicted model on behavioral intentions.

Source	Sum of Squares	df	Mean Squares	F	η^2	r
Model	5.89	1	5.89	3.65	.003	.05
Residual Explained Variance	1389.13	4	347.28	215.7	.69	.83
Within Subjects Error	605.60	376	1.61			
Total	2000.62	381				

APPENDICES

Appendix A

Strong Message

One of the most serious problems facing (Taiwan/the United States) today is the availability of fresh water for personal, agricultural, and industrial use. We must urge government officials to enact tougher laws to reduce water pollution and promote water conservation. There are several reasons that we must enact this legislation before we have a severe water problem in (Taiwan/the United States).

Population increases, coupled with economic growth have increased the demand for fresh water and the availability of this water is quickly decreasing. A 1997 report by the United Nations Commission on Sustainable Development indicated that (Taiwan) is ranked 2nd in the world in overuse of groundwater. Estimates suggest that by the year 2020 the country will be facing a shortage of water suitable for drinking. Much of the available water becoming polluted –all major sources of freshwater in this country suffer pollution to some degree. Despite legislation meant to improve water quality, (Taiwan's/the United States') water quality has deteriorated at one of the fastest rates in the world.

One major source of this problem is that the available water is becoming polluted by industrial dumping. Industrial waste accounts for 40% of total discharge of wastewater. Currently, many industries are allowed to discharge their untreated waste into this country's streams, rivers, and coastal waters. This dumping has resulted in dangerous levels of mercury and arsenic in several primary sources of drinking water. These elements have been linked to a number of fatal illnesses and are especially harmful for pregnant women and children. The Environmental Protection (Agency/Administration) estimates that approximately 60% of fetal abnormalities can be linked directly to pollutants in the freshwater supply.

A second major threat to our water supply is run-off from farms and developments. The pesticides and fertilizers used in farming and on developments such as resorts and golf courses run into nearby rivers and streams and seep into the sources of drinking water. In many areas of the country, this has seriously contaminated the supply of freshwater and resulted in serious health problems for those who drink this water. Indeed, high concentrations of pesticides in some sources of freshwater have been linked to a 30% increase in cancer-related deaths over the last 20 years.

Untreated household sewage is also a major source of pollution for (Taiwan's/the United States') water supply. Due to insufficient sewage systems, raw sewage is frequently discharged directly into rivers. These systems are unable to handle high volumes of sewage and as a consequence frequently overflow into sources of freshwater. Regional estimates indicate that in many areas of the country, sewage overflow into rivers and reservoirs occurs 5-6 times each month during periods of heavy rainfall.

Although there are some laws in place to deal with some of these problems, these laws are weak and often not enforced. New, more stringent, water conservation and protection legislation must be enacted as soon as possible. It is the government's job to place tougher restrictions on polluters and strictly enforce these restrictions in order to save this country from a shortage of fresh water and to protect the people of (Taiwan/the United States) from major health risks associated with water pollution.

Appendix B

Weak Message

One problem facing (Taiwan/the United States) today is the availability of fresh water for personal, agricultural, and industrial use. We must encourage government officials to enact tougher laws to reduce water pollution and promote water conservation. There are several reasons that we must enact this legislation before we have a water problem in (Taiwan/the United States).

Population increases, coupled with economic growth have increased the demand for fresh water and the availability of this water is decreasing. A 1997 report by the United Nations Commission on Sustainable Development indicated that (Taiwan/the United States) is ranked 50th in the world in overuse of groundwater. Estimates suggest that sometime in the next 500 years the country may be facing a shortage of water suitable for drinking. There have been a number of water-related health problems surfacing in recent years which indicates that some of the available water could be becoming polluted. It is possible that several of the sources of freshwater in this country suffer pollution to some degree. Despite legislation meant to improve water quality, (Taiwan's/the United States') water quality has deteriorated at fairly fast rate.

One source of this problem is that the available water is becoming polluted by industrial dumping. Recent public health data indicate that 3 people in the region exhibit high levels of mercury and arsenic in their blood stream. At least 1 of these cases can be linked to water consumption. This indicates a significant problem of industrial pollution of drinking sources. Mercury and arsenic have been linked to a number of illnesses and might be harmful for pregnant women and children. The Environmental Protection (Agency/Administration) estimates that perhaps 0.01% of fetal abnormalities can be linked to pollutants in the freshwater supply. Industrial waste accounts for 10% of the total discharge of wastewater. Currently, some industries are allowed to discharge their untreated waste directly into this country's streams, rivers, and coastal waters.

A second possible threat to our water supply is run-off from farms and developments. It is believed that the pesticides and fertilizers used in farming and on developments such as resorts and golf courses run into nearby rivers and streams and seep into the sources of drinking water. In many areas of the country, an increase in cancer deaths indicates that these pesticides may have contaminated the supply of freshwater. Although this water has not been directly tested, it is believed that concentrations of pesticides in some sources of freshwater may be linked to 3 or 4 cancer-related deaths over the last 20 years.

Untreated household sewage is also a source of pollution for (Taiwan's/the United States') water supply. Due to insufficient sewage systems, sewage is occasionally discharged directly into drainage systems. These systems are unable to handle high volumes of sewage and as a consequence might overflow into sources of freshwater. Regional estimates indicate that in some areas of the country, sewage overflow into rivers and reservoirs occurs 1-2 times every ten years during periods of heavy rainfall.

Although there are some laws in place to deal with some of these problems, these laws are weak and often not enforced. New, more stringent, water conservation and protection legislation should be enacted. It is the government's job to place tougher restrictions on polluters and enforce these restrictions in order to save this country from a

potential shortage of fresh water and to protect the people of (Taiwan/the United States) from possible health risks associated with unclean water.

Appendix C

Message Strength

1. The report I read was persuasive.
2. The report I read was compelling.
3. The report presented very strong arguments.
4. The arguments presented in this report were dumb.
5. This report presented strong evidence for enacting new clean water laws.
6. The report about enacting new clean water laws presented strong arguments.

Appendix D

Individualism-Collectivism Items

1. I prefer to be direct and forthright when I talk to people.
2. My happiness depends very much on the happiness of those around me.
3. I would do what would please my family, even if I detested the activity.
4. Winning is everything.
5. One should live one's life independently of others.
6. What happens to me is my own doing.
7. I usually sacrifice my self-interest for the benefit of the group.
8. It annoys me when other people perform better than I do.
9. It is important for me to maintain harmony within my group.
10. It is important to me that I do my job better than others.
11. I like sharing little things with my neighbors.
12. I enjoy working in situations involving competition with others.
13. We should keep our aging parents with us at home.
14. The well-being of my co-workers is important to me.
15. I enjoy being unique and different from others in many ways.
16. If a relative were in financial difficulty, I would help within my means.
17. Children should feel honored if their parents receive a distinguished award.
18. I often do "my own thing".
19. Competition is the law of nature.
20. If a co-worker received a prize I would feel proud.
21. I am a unique individual.
22. To me, pleasure is spending time with others.

23. When another person does better than I do, I get tense and aroused.

24. I would sacrifice an activity I enjoy very much if my family did not approve.

25. I like my privacy.

26. Without competition, it is not possible to have a good society.

27. Children should be taught to place duty before pleasure.

28. I feel good when I cooperate with others.

29. I hate to disagree with others in my group.

30. Some people emphasize winning, I am not one of them.

31. Before taking a major trip, I consult with most members of my family and many friends.

32. When I succeed, it is usually because of my abilities.

Appendix E

Attitude Items

1. I think enacting new laws to protect drinking water in the United States is a good idea.

2. It is important that we have stronger laws to protect the people of the United States from water pollution.

3. I would vote for stronger laws in the United States against polluting freshwater sources.

4. I think new laws concerning water protection in the United States are a poor idea.

5. New laws to protect the United States' freshwater should be enacted as soon as possible.

6. Stronger laws protecting United States freshwater sources are **not** necessary.

7. It is important for the U. S. government to pass new legislation to protect water quality.

8. I would not support stronger laws against polluting United States freshwater sources.

Appendix F
Behavioral Intent Items

1. I would sign a petition supporting stronger water protection laws.

2. I would write a letter to my governmental representative supporting stronger water protection laws.

3. I would be willing to boycott companies that pollute our water.

4. I would attend a rally in support of stronger water protection laws.