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Using Fear, Humor, and Logic to Reach Military Members:

A Study of Defense Department Motorcycle Safety PSAs

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Abstract

The purpose of this study was to analyze Department of Defense television public service announcements (PSAs) on motorcycle safety to determine which message appeal is most effective with military members in health campaigns. Specifically, this paper reports the findings of a research study of 110 military members. The participants watched two of six TV motorcycle safety PSAs utilizing a particular message approach; either fear, humor, or logic. The results did not support the hypothesis based on Elaboration Likelihood or Heuristic Systematic Models as to the role of involvement in message processing, but did show significant differences in message effectiveness overall and among the male and female participants of the study. These results are described and their implications explored. Further research is necessary to determine the most effective appeal for military health promotion campaigns.

In fiscal year 2003, 51 people have died in motorcycle accidents within the Department of Defense. The financial cost to the DoD for losing one service member is substantial. The financial cost of losing multiple servicemembers is staggering. The military member's rank and occupation determine the true loss in dollars to the government. However, at an average loss of $136,000 per servicemember (US Army Safety Center, 2003), the total loss in fiscal year 2003 has already reached $7 million. Over the last five years, 254 servicemembers have died in motorcycle accidents, costing more than $35 million (US Army Safety Center, 2003, Naval Safety Center, 2003, & Air Force Safety Center, 2003). According to DoD Instruction 6055.7, *Mishap Investigation, Reporting and Record Keeping,* these estimates are intended to provide generalized figures to enable magnitude estimates of cost per servicemember. The figures reflect the estimated cost of replacing one servicemember, not including disabilities, lost work time or hospitalizations.

One of the ways the military combats this problem is through the use of Armed Forces Radio and Television (AFRTS) public service announcements (PSAs). These PSAs, often referred to as spots, substitute for traditional commercials and are a primary channel for disseminating information, especially at overseas locations. Limited budgets demand that the right messages are provided to the right people.

This investigation examines the effectiveness of existing PSA appeals designed to enhance motorcycle safety using the Elaboration Likelihood Model (ELM) and Heuristic-Systematic Model (HSM) of persuasion, and the understanding of fear and humor appeals. This study reasoned that high-involved participants who view logical or fear-based PSAs would show a larger increase in motorcycle safety knowledge and positive behavior intent, whereas low-

involved participants who view humorous PSAs will show a larger increase in positive behavior intent.

PSAs in the Military

Military leaders have command information that must be communicated effectively to servicemembers and their families. AFRTS PSAs are a primary means to accomplish this with audiences stationed overseas. AFRTS broadcasts a variety of command information spots in place of advertisement commercials normally aired by commercial radio and television stations. These spots provide information on a variety of topics, such as safety, health care and family services. The Radio and Television Production Office (RTPO) divides spot announcements into two categories: PSAs and contract spots. PSAs are typically developed by agencies for non-profit organizations catering to or providing a service for the general public. However, contract spots are exclusively designed for the AFRTS by civilian contractors, for the sole purpose of delivering Department of Defense messages to a joint-service audience worldwide. Together, PSAs and contract spots encompass 42 general subject areas and more than 200 topics. Regardless of how they are developed, the RTPO is ultimately responsible for approving and authorizing spots for worldwide distribution over military radio and television networks (AFRTS, 2003). Thirteen motorcycle safety spots are currently in rotation. Six of those spots were used for this study. According to the RTPO, each motorcycle safety spot airs approximately 1.8 times per week on five channels (S. Dunn, personal communication, July 11, 2003). This means that motorcycle safety spots are shown 117 times per week.

Literature Review

This investigation argues that receiver involvement in motorcycling determines the way they process PSAs and how they respond to them. This position is based on extent theory and research concerning dual processing.

Dual Processing Models

Elaboration Likelihood Model. Part of understanding how to persuade a person is knowing how different types of persuasive messages are processed by different people. To describe how persuasive messages are received, Petty and Cacioppo (1981) brought cognitive and non-cognitive persuasive communication concepts together to form the dual-processing Elaboration Likelihood Model (ELM). They proposed that two routes are available to reach attitude change: the central route and the peripheral route. The central route requires a person to think, or elaborate, about the issue or arguments being communicated, and as such, requires a high level of involvement from the person being persuaded. The peripheral route does not require effort or thought, and relies on non-issue-relevant cues like the person's impression of motives or how attractive the message or messenger is.

In our research into effectiveness of PSAs, the ELM provides a framework through which producers of PSAs can develop messages targeted at certain audiences. Since it can be presumed that most motorcycle riders will have a high involvement in motorcycle-related messages, they should be more likely to elaborate on PSAs, and thus are more susceptible to messages along the central route. Those who do not ride motorcycles, and thus have low involvement, are more likely to be swayed by peripheral route messages.

Since effort is involved in the changing of the attitude, Petty and Cacioppo (1981) also found that the central route led to much more lasting and stronger attitude change than the peripheral route. Shifts in attitudes from the peripheral route appeared to be temporary and more easily changed. According to Petty and Cacioppo (1981), "Enduring attitude change … appears to depend on the likelihood that an issue or argument will be elaborated upon (thought about)" (p. 263). They said for an issue to be elaborated on, the receiver must have both the motivation and ability to process the information. Their research showed that people are usually motivated to think about messages with high personal relevance. They also found that people are more motivated when the message is not in agreement with strongly held beliefs. As for ability to process the information, Petty and Cacioppo said that there are variables that affect the ability to elaborate on an issue, such as how often the message is repeated, how distracted the person is when the message is delivered, and what kind of media is used to deliver the message (Petty & Cacioppo, 1981).

They did not say that attitude will change just because a message is received and elaborated on, only that when the motivation and ability are present, the person will elaborate on the message (Petty & Cacioppo, 1981). How effective the message is in achieving attitude change is dependent on other issues. Petty and Cacioppo (1986) said that many variables can affect if and how much an attitude will change, with one of the most important to both the central and peripheral routes being strength of the argument. For instance, Petty and Cacioppo (1981) explain:

> If the person perceives the message to contain strong, compelling arguments, then thinking about the arguments will cause favorable thoughts to be rehearsed – and enduring persuasion will result; but, if the person perceives the message to contain weak

> arguments, thinking about the arguments will cause counterarguments to be rehearsed, and it is possible for the person to move in a direction away from that advocated in the communication (boomerang) (p. 265).

Petty and Cacioppo (1981) argue that the central route to persuasion is a much more difficult way to change attitudes, because it requires motivation and ability, and the argument must be logical and compelling. The peripheral route, however, requires little effort on the part of the target person because elaboration is not necessary, but an effective message is still necessary. One tactic using the peripheral route is to cause the person to associate the position being advocated with something he or she already holds a favorable opinion about. Still, another is to use an expert, attractive, or powerful person as the sender of the message. Another is to present several bad issues that the persuader knows the subject disagrees with, and then send the targeted persuasive message in hopes that it will appear much better in comparison (Petty & Cacioppo, 1981).

The focus of ELM is on how messages are perceived. If ELM works, then people with high involvement will not be as likely to be persuaded by affective advertising. This was shown in a study conducted by Kirby, Ureda, Rose, and Hussey (1998) who found that women who had low-involvement levels on the topic of breast cancer found public service announcements designed around positive affective cues to be much more effective than announcements designed around negative affective cues. High-involvement women, on the other hand, showed little interest in the affective portion of the messages, but actively sought out the messages in the PSAs regardless of affective cues.

If the research by Kirby et al. is able to be generalized to other health campaigns, then in our research of AFRTS PSAs, we should find similar outcomes. While in higher involvement

participants, we should see more elaboration on central route messages found in logical and fear-based advertisements, the affective portions of the advertisement should be more effective for lower involvement participants. The higher involvement participants may still receive the messages from the peripheral ads, but will not be swayed by the affect portion of those ads.

In addition to the importance of the word content of an advertisement, images used in visual campaigns must also be closely scrutinized in regard to ELM. Miniard, Bhatla, Lord, Dickson and Unnava (1991) conducted an experiment that tested use of pictures in advertisements for an orange soft drink, and found that people who showed high involvement were more persuaded by advertisements that had pictures that related to the product. They showed two advertisements for the same orange-flavored soft drink with different pictures. One showed an attractive scene of a sunset, and was a peripheral route advertisement aimed at making the participant associate the pleasant feelings of a tropical view with the soft drink. The other showed a picture of orange slices, and was a central route message aimed at providing more information about the product. They found that the peripheral route portrayal with the sunsets worked better for low-involvement participants than the related pictures of orange slices, and that the central route picture of orange slices worked better for high-involvement participants.

Taking these two studies into account, in our study of motorcycle safety PSAs, we should find that the logical/cognitive and fear appeals will be processed using the central route, and thus more effective with the participants who show high involvement in the topic of motorcycle safety. We should find that the low-involvement participants will be more persuaded by affective, peripheral route advertisements like those found in the two humor-based advertisements.

The Heuristic-Systematic Model. The Heuristic-Systematic Model of Persuasion is an alternative to the ELM theory of cognitive information. It shares some features with the ELM but makes distinct predictions as well (Miller, 2002, p. 121). Proposed by Shelley Chaiken (1987), this model posits two different processes of persuasion: systematic processing and heuristic processing. Systematic processing is similar to central processing in the ELM, involving careful consideration of message content by attending to all relevant pieces of information. Heuristic processing is more passive and less thoughtful. It is also somewhat superficial in that it focuses only on a subset of informational cues. These heuristic cues constitute decision rules people acquire over time. Heuristics allow people to evaluate message content without having to scrutinize the content (Stiff, 1994, p.192). Unlike the ELM, systematic and heuristic processing are parallel processes, not mutually exclusive ones. Most people, Chaiken (1987) predicts, will engage in heuristic processing unless they have the ability and motivation to turn to systematic processing (similar to the ELM). People employ heuristics in a variety of situations, including political decision making, psychological research, consideration set formation, risk perception, expressing dissent in the workplace, ethics in technical communication, or something as mundane as grocery shopping. HSM posits that people use mental shortcuts, or heuristics, to make decisions about topics in which there is not a great deal of personal concern or, says Chaiken (1987), when they don't want to put forth the effort to engage in conscious processing. Pfau and Wan (2003) suspect people typically employ heuristics to draw inferences when they process an organization's communication. Determining which heuristics are employed by specific receiver groups in given situations should interest academics and public relations practitioners. A better understanding in this area would benefit strategic communicators who

strive to make informed decisions regarding message design, sources and communications outlets in their persuasion efforts.

Lau and Redlawsk (2001) challenge the assumption that cognitive heuristics improve the decision-making abilities of everyday voters. They define heuristics as problem-solving strategies which serve to "keep the information processing demands of the task within bounds" (Abelson and Levi, 1985, p. 255). They look specifically at five cognitive shortcuts – party affiliation, ideology, endorsements, poll results (or viability) and candidate appearance – any or all of which can influence a voter's decision, especially when not a lot of political information has been presented.

Lubart and Getz (1998) assert that research heuristics have recently begun to be explored for their role in guiding psychological science. That is, researchers are using implicit rules, acquired through accepted research practices, to study problems, reduce their complexity and help select possible solutions to those problems. They focus their study on the psychology of creativity.

Trumbo (2002) says that the HSM is well suited in studies of risk communication because it can form effective links among the questions of where people get their information, how they deal with it and how this information influences their perceptions of risk. Eagly and Chaiken (1993, p. 326) assert the model was "developed to apply to validity seeking persuasion settings in which people's primary motivational concern is to attain accurate attitudes that square with relevant facts." In studying information processing and reaction to risk (specifically with regard to health risks, such as cancer, caused from living in certain areas), he found that heuristic reasoning is consistently linked to lower risk evaluations.

Kassing (2002) asserts that employees use heuristic strategy to express upward dissent in the workplace, which allows them to exercise a certain degree of political, relational and

organizational savvy when choosing to express their dissatisfaction. Through an interpretive thematic analysis of accounts of dissent among employees, he found five distinct strategies of dissent: direct-factual appeal, repetition, solution presentation, circumvention and threatening-resignation.

Dragga (1997) claims that studies of technical communication ethics have focused on behavior analysis, offering heuristics for deciding ethical dilemmas, but asserting that the subject might better be taught via a narrative perspective, offering examples of moral courage and integrity. He asserts that teachers ought to "focus less on building matrices of ethical analysis and more on developing the character of our students, because it is their character that will ultimately determine their ethical decisions."

Laroche, et al. (2003) posit that consumers use five heuristics in the consideration set formation, "a critical first phase before actual choice behavior." These heuristics are identified as conjunctive, disjunctive, lexicographic, linear additive, and geometric compensatory. Collecting data from real consumers' selections of beer brands and fast food outlets, they found the conjunctive heuristic to be the most-often employed in the consideration set formation for the two product classes. It was a "cut-off" heuristic in that the consumer mentally reduced the number of acceptable brands in order to simplify the decision task.

Heuristics are like tools (McCreery, 2002). When advertisers are able to identify certain potential heuristics, they are able to design a more effective campaign. Maybe they need to use the client's (viewer's) language the way the client uses it, avoiding jargon, for example. Maybe they need to use it a little differently, so that whatever is being pitched seems fresh and interesting. Or maybe they need to speak concretely but ambiguously, leaving space to maneuver. This is especially true for advertising companies hired by organizations that are

legalistically inclined to insist on the letter of whatever they were promised. As in the ELM, if the message is ambiguous but attitudinally neutral, viewers (receivers) may look for peripheral cues, such as food, sex or money appeals, an expert appeal; or they may seek a contrast effect in which the advocated position is presented only after several other despised positions have been presented.

Viewers exposed to motorcycle safety campaign announcements may employ heuristics in some way to develop a positive or negative opinion about the ads. These opinions may vary as well depending on the type of ad to which they are exposed – humorous, fear-based or logical. That opinion, in turn, might later influence their behavior.

For instance, after watching a fear-based appeal, in which the announcer explains why the person bandaged from head to toe and apparently hooked to some sort of life saving equipment is probably going to survive, viewers may employ a heuristic such as *motorcycles are dangerous. I'll never get on one. Or if I do, I'll make sure I'm wearing a helmet.*

On logic-based appeals, similar heuristics may be employed. *These ad people think the same way I do. Everybody knows that. Who wouldn't believe this?*

A humor-based approach may lead the viewer to identify with whatever appealed to his or her sense of humor. If so, a connection may be made. *Those ad people think the same way I do*. Whatever the message is, the viewer in this instance might be persuaded to accept it, or at least not reject it. If he or she already had the same position, it might be reinforced after viewing this type of appeal.

Processing Approaches: The Central (or Systematic) Route

Logic Appeals. As discussed earlier, both ELM and HSM indicate that logic appeals are dependent upon receiver involvement levels being high (Petty & Cacioppo, 1981; Chaiken,

1987). For the purpose of this study, logical arguments should appeal to people with high interest in the topic of motorcycle safety. The high involvement should lead to increased elaboration, thus increased knowledge of the topic and behavioral attitude change (Petty& Cacioppo, 1981, Chaiken, 1987).

Fear Appeals. PSAs and campaigns using threats have been proven to elicit fear, a powerful motivator in persuading an individual to change an attitude, belief, or behavior (Witte, 1998; Clarke, 1998; Morman, 2000). Previous findings were primarily based on a civilian audience, so it seems appropriate to study fear appeals in military PSAs effectiveness on military audiences. Typical fear messages address topics such as condom use to prevent sexually transmitted diseases, smoking cessation, and sunscreen to prevent skin cancer. While this study focuses specifically on motorcycle safety messages, the results can open a window into other areas of health campaigns the military may use.

Long-term behavior changes are possible when the fear appeal has been constructed according to specific theoretical guidelines (Rogers, 1983; Witte, 1992). First, fear appeals are persuasive messages that emphasize the harmful physical or social consequences of failing to comply with the recommendations of the message (Dillard, 1994). Over the years, research has identified three key variables that comprise the fear appeals: fear, perceived threat, and perceived efficacy (Witte & Allen, 2000).

While fear and threat are different, they are related, such that the higher the perceived threat, the greater the fear experienced (Witte & Allen, 2000). Perceived severity refers to an individual's beliefs about the seriousness of the threat (e.g., "*If I don't wear protection I could die*"). Perceived susceptibility is an individual's beliefs about his chances of experiencing the

threat (e.g., "*My uncle died because he didn't wear a helmet while riding. I've ridden before without a helmet. I could also die if I ride without a helmet again*") (Witte, 1992).

The efficacy component of a fear appeal refers to the message cues or action steps to avoid the threat offered by the message (Morman, 2000). Response efficacy refers to beliefs as to whether or not the recommended action step will actually avoid the threat (e.g., "*I believe using a helmet while riding will protect me from dying*"). Self-efficacy refers to beliefs about the ability to effectively perform a recommended action step (e.g., "*I will have access to a helmet before I ride with anyone again*") (Rogers, 1975). In both of the PSAs chosen to represent fear appeals in this study, efficacy is approached by giving participants a positive, easy route to avoid the situation that induces the fear, namely by taking a motorcycle safety course before riding for the first time.

In the most recent fear appeal theory, Witte (1992) integrated previous theoretical perspectives (i.e., Janis & Feshbach, 1953; Leventhal, 1970; Rogers, 1975) to develop the Extended Parallel Process Model (EPPM). Using Leventhal's parallel process model as a basis, the EPPM differentiates between two processes Witte (1992) believes influence message acceptance in fear appeal research: danger control and fear control.

Previous research shows that the use of fear appeals in PSAs sometimes alienates the audience and pushes it away from the intended action (Hovland, 1953). Using the EPPM helps identify steps that help avoid this. The EPPM proposes that a fear appeal initiates two appraisals of the message (Witte & Allen, 2000). First, individuals appraise the threat in the message. When an individual perceives that he or she is susceptible to a severe threat conveyed in the message (high or strong threat), fear is elicited and people begin the second appraisal, the evaluation of the efficacy of the recommended action step (Witte, 1992). Conversely, when the threat is

perceived to be low or weak, either because of low severity or low susceptibility, there is no motivation to appraise the message any further and the message is ignored and no action is taken (Witte & Allen, 2000). For example, a non-motorcycle rider would not appraise a motorcycle safety fear appeal message as a high threat message because he is not susceptible to the threat. This is consistent with the ELM's prediction that that low-involvement (i.e. non-motorcycle riders) participants will be less persuaded by fear-based, central-route advertising messages. Because they are not likely to feel threat from the message, they would be unlikely to elaborate upon it (Petty & Cacioppo, 1981).

In a meta-analysis by Witte & Allen (2000) 98 studies on fear appeal were researched. The overall evidence is that the stronger the severity and susceptibility in the message, the more attitude, intention, and behavior change. Also, when high levels of fear were used, then defensive responses also rose. However, strong fear appeals do motivate when accompanied by equally strong efficacy messages (i.e. that people can work to decrease their susceptibility by following the recommended response).

Morman (2000) used the EPPM to study men's intentions to perform the testicular self-examination for signs of cancer. Results supported the EPPM predictions that high-threat/high-efficacy messages will lead to positive outcomes like message adoption and attitude change.

A more recent study of fear appeals regarding radon gas television ads also supported the relationship between high-threat/high-efficacy messages. In this case, the message was shown to adults who had children in the home and adults without children. The ad informed viewers about the lethal effects of radon gas and what measures needed to be taken for proper protection. Results indicated that respondents (who had children at home) who were exposed to an explicit

ad had significantly higher scores than those who did not have children (LaTour & Tanner, 2003).

Using fear appeals is an important aspect to understand because it should confirm that one appeal or approach is more effective for a military audience rather than using a variety of appeals to target different types of viewers. Although the research may not confirm the optimal level of fear for a message to be effective, the overall results of the study should help the military consider how to use a particular appeal most effectively.

Processing Approaches: The Peripheral (or Heuristic) Route

Humor Appeals. The phenomenon known as humor has been studied since the days of Aristotle (384-322 B.C.) Commenting in *Poetics*, Aristotle states, "We do not know who decided on masks, prologues, the number of actors, and so forth ... the making of plots came originally from Sicily ... Homer ... was the first to outline the forms of comedy, by making a story not out of invective but out of the laughable" (Bambrough, 1963). Laughter and smiling are believed to have developed from a primitive "roar of triumph" in an ancient jungle duel (Rapp in Pettifor, 1982; Raskin, 1985). The act of roaring or laughing was the way the victor released his accumulated energy and signaled to others that it was safe to come out from hiding (Haig, 1988). Freud (1905) regarded the smile as the basic form of laughter, but Lockard, Fahrenbruch, Smith and Morgan (1977) hold it stemmed from the silent, bared-teeth submissive grimace, which became a mark of social interaction and greeting.

The three primary areas of humor theory are social, psychoanalytic, and cognitive-perceptual. In the social arena, Chapman (1975,1976) states that sharing a situation with at least one other person facilitates humorous laughter. Heuendorf and Fennell (1988) say that individuals are encouraged to join in social laughter to show they are one of the group. Langevin

and Safer (1977) argue that the content of humor is conditioned by the socio-cultural background of the parties involved. And Duncan and Feisal (1989) say that all humor is situation-specific, and can only be interpreted within that context. Superiority of the originator and debasement of the victim or butt of a joke is another social theory of humor. Wilson (1979) explains there seems to be a norm permitting people to engage each other in controlled hostile joking, whereas open (physical) aggression is socially unacceptable. And the disparagement theory is based on the premise that what we laugh at is never our own, but another's weaknesses (Gloria, 1991).

The psychoanalytic theory of humor is one mostly dominated by Freud. Freud (1976) viewed wit, the comic, and humor as three separate ways of deriving pleasure from intellectual activity. The pleasure comes from a saving of affect. Freud says that in humor, there is a saving of feeling and that one enjoys seeing oneself in a non-serious light, event if the facts of the matter do not logically justify it.

The cognitive-perceptual realm of humor theory involves manifestations such as incongruity, ambiguity, and the ludicrous. Berger (1976) claims that humor is unique in that the relationships it establishes contain incongruity, and Shibles (1978) states that humor must involve thought, as nothing in itself is funny. Suls (1972) proposed his two-stage model for the appreciation of jokes and cartoons, giving the realm of theory a boost. According to Suls, humor results from the perception of an initial incongruity, which is then made congruous in an unexpected way.

For the focus of this paper, humor is reviewed as it applies to persuasion. The humor literature shows that using appropriate humor increases the likeability of a communicator (Goodchilds, 1972; Gruner, 1996; Mann, 1961; Mettee et al., 1971), and persuasion studies indicate that liked communicators are more influential (e.g., McGuire, 1968; Norman, 1976).

This ties in with the affective, peripheral-route aspect of ELM and heuristic route of HSM in that source attractiveness, or likeability, is one of the affect cues that can bring about peripheral-route processing (Petty & Cacioppo, 1981). If this bears out, then the humorous advertisements in our military PSAs should be more likable, and thus more persuasive to low-involvement participants operating on the peripheral or heuristic route.

Humor is also used in bargaining. Chertkoff and Esser's (1976) review finds that bargainers are more cooperative when their social relationship is positive. Quin and Arinoff (1981) studies show that subjects who received a demand accompanied by humor made a greater financial concession than no-humor subjects. Their study also found that humor was equally effective as an influence technique when used by both sexes and when directed toward both sexes.

Humor can be very effective in advertising. Comedy is the most popular genre of television programming, accounting for more than 45 percent of the 100 highest rated television series of all time (Zillman & Bryant, 1991). The backbone behind all of that television is advertising in the form of commercials. The average American is bombarded by 1,000 television commercials a week (NBC News, 1990). Humorous commercials have made up a large number of those advertisements, simply because they work. In the first year of Wendy's "Where's the beef?" campaign created by Joe Sedelmaier, the campaign produced a 31 percent increase in the company's gross revenues and a 24 percent increase in its net income (Hume, 1988).

It is also widely used in politics. We often hear that the political joke is an offensive weapon with which an aggressive, politically engaged person makes the arrangements or precautions of an opponent seem ridiculous. But even when political jokes serve defensive purposes, they are nonetheless weapons (Speier, 1998). In a survey of 379 humorous political

advertisements from 1952 to 1996 in every election level from civic to presidential, it was found that humor was effective in attacking opponents and mitigating voter backlash against the sponsoring candidate of the negative advertisement (Hunter, 2000).

Based on ELM and HSM we should find that the humor appeals will be more effective with those who show low involvement in the topic of motorcycle safety, and persuasion in these participants will be along the peripheral route.

H1: Higher-involved participants who view logical or fear-based PSAs manifest a greater increase in motorcycle safety knowledge and positive behavior intent than lower-involved participants.

H2: Lower-involved participants who view humorous PSAs manifest greater increase in positive behavior intent than higher-involved participants.

While these hypotheses are targeted specifically at involvement level of the participants, it is important to keep in mind that ELM, HSM and the studies of fear and humor messages are affected by many variables. One variable of interest to this study in particular is the element of gender as it relates to perception of a message. Because a large percentage of motorcycle riders is made up of male service members, it is important to see how gender plays a role in the processing of persuasive messages. For this reason, the results of this study will also try to answer the research question:

RQ: What effect does gender have on participants' reactions to the different messages used in the PSAs in relation to knowledge, perceived effectiveness, affect, and behavior intent?

Method

Procedure

In-test groups were assigned randomly to message conditions. This experiment was a pre-test, post-test design, with four groups assigned to three treatment groups and one control group. Participants were told they would be involved in a test of message effectiveness in mass media. Each treatment group watched a television program with motorcycle safety PSAs embedded between commercials, and the control group watched an unedited copy of the program. The participants were 111 military members and civilian employees of the military working at Tinker Air Force Base in Oklahoma. Participants were asked not to talk during the pre-test and post-test phases, but were allowed to talk normally during the video tape portions of the experiment in order to foster a more natural viewing environment. In-test groups were assigned randomly to message conditions.

The fear-based message treatment group was comprised of 29 students in the First Term Airmen Center class at Tinker Air Force Base. These students were all first-term enlisted members reporting to their first duty station and attending a course to integrate them into the Air Force. The cognitive-message group was 26 Navy and Marine members assigned to the air station at Tinker. This group consisted of all males. The humor-based message groups consisted of 10 Air Force Reserve members and 19 Navy and Marine members, all assigned to Tinker. The control group was comprised of 27 students in the base training squadron, selected by the base safety office to take part in the experiment.

Messages

The PSAs selected in this study were six of 13 motorcycle safety PSAs produced by Radio and Television Production Office contractors for Armed Forces Radio and Television

Service and currently airing on the American Forces Network in overseas military communities (S. Dunn, personal communication, July 11, 2003). The six were chosen because they best fit the profiles of fear appeals, humor appeals, and logical/cognitive appeals. The PSAs were produced under direction of the AFRTS Radio and Television Production Office, which manages the military PSA production. Three of the examples chosen (*Fast Machines, Hospital Room,* and *Biker Godiva*) came from Film House, Inc., from Nashville, TN. The remaining three (*One of Those Things, Tips From Mom,* and *How to Spot a Biker*) came from Venture Productions in Pompano Beach, FL.

While the choice of the PSAs used was mandated by the needs for an equal number of professionally produced products with the elements of fear, humor, or logic, the show the PSAs were to be embedded in was chosen specifically to appeal to the majority of the participants in the test. MTV's *The Real World* is one of the top-rated reality TV shows, and is designed for audiences between the ages of 18-35. The show follows the lives of seven roommates placed together in Paris for several months. The show does not shy away from alcohol or sexual themes, and was a good fit to work with the camouflage questions dealing with sexually risky behavior. It was felt that using a show that was more likely to be viewed by the audience was more realistic than using a show they would likely not watch in the natural environment.

Design and Manipulation

Two independent variables were featured. Experimental condition was operationalized by the four groups consisting of fear messages, humor messages, logical, and control. Gender was operationalized by asking respondents to identify themselves as male or female in the demographic questions at the beginning of the pre-survey.

The PSAs embedded were the ones that best portrayed the current use of humor, fear, and logic appeals in the population of commercials currently in use by AFRTS. The following lists the commercials used and a description of the plot and characters in the PSAs.

Logical/Cognitive Appeal Ads. The two logical PSAs were titled *Fast Machines* and *How to Spot a Biker*. In *Fast Machines*, images of high-tech military gear including jet planes, combat assault boats, and armored vehicles are shown with an announcer talking about how these high-tech machines require a lot of training and expertise to handle safely. The PSA then cuts to an image of a motorcycle driving down the road, and the announcer says, "This machine is no different." The announcer then explains the importance of attending a motorcycle safety course and wearing proper riding gear. In *How to Spot a Biker*, the image is of a motorcycle with a rider dressed in all black leather and wearing a black helmet, in front of a white background. The announcer talks about how it is easy to spot a biker, because bikers wear black leather pants and jackets, and black helmets. The background then changes to black, and the announcer tells the listener that at night, it's much harder to spot a biker, so it's important to wear reflective clothing and use headlights.

Fear Appeal Ads. The two fear appeal PSAs were titled *Hospital Room* and *One of Those Things*. In *Hospital Room*, the camera shows medical equipment and a nurse treating an unconscious patient with casts and bandages over most of his body. It mentions that this corporal had been riding motorcycles for years in the United States, and thought that riding in Europe would be pretty much the same. But the announcer says it wasn't. Rules of the road are different in Europe. The announcer then goes on to explain that the corporal will be all right, but that if he could talk right now, he'd tell the viewer that it's important to learn the local rules for motorcycle riding and to take a motorcycle safety course. In *It Was Just One of Those Things,* a

man is looking at a new motorcycle in a dealership, and starts imagining riding the motorcycle. He comes around a corner and is almost hit by a truck, laying the motorcycle down on the pavement in a screeching crash. He breaks out of the daydream to hear the salesman tell him that he has to take a motorcycle safety course before he can legally ride the motorcycle. The customer replies, "You can count on it."

Humor Appeal Ads. The two humor appeal ads are titled *Biker Godiva* and *Tips from Mom*. *Biker Godiva* shows a motorcycle rider getting ready to go on a ride, to the sound of the *Austin Powers* theme song. He is looking himself over in a mirror, completely naked. His riding gear, including thick leather clothes and a helmet, is hanging on pegs next to the mirror. He proceeds outside, waving to a surprised neighbor working in the yard, with the camera strategically positioned so that a pink flamingo covers his bottom half. He then gets on his bike, and rides away. The announcer says: "If you ride without your helmet, you might as well be wearing nothing at all." In *Tips from Mom*, a motorcycle rider comes outside wearing a T-shirt and long pants. An older woman's voice tells him he's forgotten his helmet. He goes back inside, and comes out with his helmet, only to be reminded by "Mom's" voice that he isn't wearing a jacket to protect him if there's an accident. He goes back inside, and comes out ready to ride, then proceeds to climb on board behind his mother, who is driving. She gives him a few quick tips on balancing his weight behind her and not making sudden moves, then they are off.

Involvement: The pre- and post-surveys measured involvement level of participants as a variable randomly scattered across the different groups, and no manipulation of involvement levels was attempted.

Measures

Involvement. Involvement was the independent variable of our hypothesis. It was measured using an abbreviated version of the Zaichkowsky (1985) personal involvement inventory. The PII has proven to be consistent, with a history of scores above .90 on Cronbach's Alpha (Rubin, 1985). It has been used for many different types of product involvement tests, and has recently been used successfully in testing involvement levels for studies of inoculation (Pfau, Szabo, Anderson, Morrill, Zubric, & Wan, 2001). Subjects were given the same six-item, 7-point semantic differential scale that asked how important the issue of motorcycle safety is to the participant, with responses of unimportant/important, of no concern/of much concern, irrelevant/relevant, means nothing/means a lot, doesn't matter/matters, and insignificant/significant. Internal reliability of the scale was .97.

Effectiveness. PSA effectiveness was measured in three ways. First, participants were asked two knowledge-based, multiple-choice questions about information that was available in the PSAs on both the pre-test and the post-test, to see if any change occurred in the participants' level of knowledge based on the treatment. The questions asked the subject to identify proper motorcycle attire and requirements to ride a motorcycle on a military installation.

The second test of effectiveness invited participants' perceptions of an ads' effectiveness. It was assessed using a 7-point semantic differential scale measurement designed by Austin, Pinkleton, and Fujioka (1999) based on the message interpretation process model, which has been reliable in several studies of public service announcements. The scale asked participants to choose between adjectives describing the commercial as unrealistic/realistic, forgettable/memorable, not effective/effective, annoying/enjoyable, and not persuasive/persuasive. Reliability of .89 was achieved with this scale.

The third measurement of effectiveness was a series of questions designed to measure behavior attitudes. Based on the behavioral attitude scales used in multiple studies of inoculation theory (Burgoon, Cohen, Miller, & Montgomery, 1978; Miller & Burgoon, 1979; Pfau & Burgoon, 1988; Pfau et al., 1990; as cited in Pfau, Bockern, & Kang, 1992), this scale has proved reliable in determining behavioral attitudes. The 7-interval semantic differential scales asked how likely respondents would be to wear a helmet when riding a motorcycle, attend safety courses, wear reflective clothing, or drink alcohol before riding a motorcycle. Reliability measured at .59 for the pre-test survey and .64 for the post-test survey.

Affect. Because two categories of PSA were based on emotional cues, a manipulation check of the PSAs' affect was needed to ensure study validity. To test affect in the PSAs, a scale designed by Dillard (1996) was used to measure emotional response to advertisements. This scale has been used successfully in the study of inoculation (Pfau et al., 2001). Subjects were asked to rate on a scale of 1-7 if they felt emotions of anger (reliability of .86), fear (reliability of .95), and amusement (reliability of .60).

Results

Statistical analysis

In the first phase of analysis, a 4 (experimental condition: humor, logic, fear, control) X 2 (gender: male, female) multivariate analysis of covariance (MANCOVA) was computed on the dependent variables of affect, post knowledge and behavior attitude. Issue involvement served as a covariate.

The omnibus 4 X 2 factorial MANCOVA revealed a main effect for experimental condition, F (18, 258) = 2.79, p<.01, eta^2=.155. Also, results revealed a main effect for gender, F (6, 91) = 2.39, p<.05, eta^2=.136, with univariate tests indicating significant effects on behavior, F

(1, 8) = 8.56, $p<.01$, $eta^2=.082$, and humor, F (1, 11) = 4.54, $p<.05$, $eta^2=.045$. The pattern of means revealed that men were more receptive to humor appeals, while the women were more receptive to fear appeals. They also revealed that men were less susceptible than women to behavior attitude change across all of the ad types.

The omnibus MANCOVA also revealed an interaction effect involving experimental condition and gender F (6, 91) = 2.394, $p<.05$, $eta^2=.109$. The covariate of involvement was not significant. Experimental condition main effect findings and the interaction effect of experimental condition and gender were probed using appropriate follow-up tests.

Manipulation check

It was predicted that the humor manipulation would elicit greater amusement over the other groups, that the fear manipulation would elicit greater anger and fear over the other groups, and that the logical and control groups would show little to no affect in the study. A manipulation check of the affect variables using descriptive statistics showed the control group experienced greater anger and fear than the treatment groups, and there were no significant differences between the humor group and the others for eliciting humor (See Table 1).

Hypotheses

Because the covariate of involvement was not found to be significant in any test, neither of the hypotheses were supported. However, the pattern of results were informative.

Main and Interaction Effects Involving Experimental Condition

Results indicated a main effect for experimental condition for the both logical (3.14, $p<.01$) and fear (5.59, $p<.01$) groups over the control group in regards to increase in motorcycle safety knowledge. No significance was found between the humor and control groups in the knowledge measurement.

As reported earlier, the results revealed an interaction effect between the experimental condition and gender. This effect was probed using Scheffe post-hoc tests, which revealed significant differences in elicited affect across treatment groups. For the fear appeal group, females reported significantly more anger than males (4.60, $p<.01$). Females in the fear appeal group also reported significantly more fear than males (4.39, $p<.01$). In the humor appeal group, a significant level of humor was achieved in males over females (5.89, $p<.01$). In measurements of perceived effectiveness, women in the fear appeal group reported the PSAs as more effective than males at a significant level (3.52, $p<.01$), while in the humor appeal group, males reported the PSAs more effective than females at a significant level (5.53 $p<.01$). For the variable of behavior attitude change, women reported significantly higher positive change in both the fear appeal group (3.82, $p<.01$) and the humor group (3.51, $p<.01$). This data is graphically displayed in Table 2.

Discussion

This research explored the role of involvement in persuasiveness of different message appeals in military motorcycle safety PSAs. Based on previous research into the dual processing concepts of central and peripheral routes found in ELM (Petty & Cacioppo, 1981) and the heuristic and systematic routes of HSM (Chaiken, 1987), along with abundant research into fear appeals (Witte, 1998; Clarke, 1998; Morman, 2000) and advertising use of humor appeals (Hume, 1988), the prediction of this study was that involvement would play a major factor in determining the effectiveness of different message types. However, the research revealed that there are variables other than involvement impacting the communication of the persuasive messages. Particularly striking was the interaction of gender and experimental condition, which

impacted processing of the fear appeal and humor appeal messages and moderated message effectiveness.

Some of the major findings of the interaction between experimental condition and gender dealt with the fear appeal group and the humor group, and was particularly evident in the manipulation check using the affect scale. Results comparing men and women in the study showed women viewing the fear appeals felt more fear and anger, perceived the messages to be more effective, and had more positive behavior attitude change. Conversely, the results showed that men viewing the humor appeals felt more humor and perceived the messages to be more effective than did their female counterparts. Strangely, the women viewing the humor appeals, though they reported that they didn't find them funny or perceive them to be effective, were more likely to have positive behavior attitude change than did the men in the humor appeal study. This finding is disturbing, because young males are much more at risk from fatal motorcycle accidents than females. This means that the target audience for the messages, young males, are not receiving the logical or fear appeal messages that were shown to increase motorcycle safety knowledge, and their behavior attitudes don't change even in the humor PSAs they report to be more effective. Without attitude change, it is unlikely that behavior will change, and the messages are thus ineffective in combating motorcycle fatalities in the military.

One reason the women might not have found the commercials funny is because the protagonists in the humor ads were mostly male and unattractive. This may have led to their inability to relate to the characters, which may have led to source credibility issues explained in HSM heuristic and ELM peripheral routes discussed earlier (Petty & Cacioppo, 1981; Kassing, 2002). Similarly, men may have found it hard to relate to the characters in the fear appeal ads. Fear appeal studies in self-efficacy have shown that when people don't feel that the fear-inducing

message can ever apply to them, they will not feel the threat, and thus they won't feel fear and be motivated to change their behaviors (Morman, 2000).

In regard to the manipulation check for affect caused by exposure to the fear appeals, the control group scored significantly higher than did the three treatment groups, with fear a distant second. One possible explanation is the sample procedures for the control group. Because of time constraints, the investigators employed convenience samples, and the control group was comprised of trainees awaiting transfer to their permanent duty assignments. Because they had been in training for approximately six months, their test anxiety was probably higher than the other groups. This may have predisposed them to higher levels of fear and anger regardless of the test manipulations. For the humor manipulation test, the humor appeal group had the highest levels of experienced humor, but the scores on the logical group were close enough that no significant difference could be determined in a within-group analysis. Several of the participants in this group commented to the researchers after the post-survey that the embedding of the commercials in a non-military program with only product commercials surrounding it was obvious. These participants mentioned that they found the idea of military PSAs embedded into a commercial program to be humorous, which may have led to the higher levels of humor reported in this group. With the logical message group removed, the humor group score on the affect scale would have proven to be significant of the three remaining group scores.

One of the limitations of this study was the inability to do a random-sample survey across all services and age ranges. The study used convenience samples, and thus the findings are not as generalizable to the entire military and family member population most at risk to fatal motorcycle accidents. Additionally, the survey items used to measure behavior attitude and humor had low coefficient alphas (.64 and .60 respectively), though they had been used

successfully in past research. In addition, several participants in each of the groups said they did not watch commercials, and asked if they could be skipped during the test. This shows that many participants in a natural environment would be even less likely to receive the messages. Others complained that they would not usually watch the *Real World* show, especially the older participants. This may have caused some of the participants to tune out the entire treatment process. Possibly a less controversial or less youth-based show would have changed the findings.

The ultimate goal of a safety campaign is to influence change in risky behavior. Young men are more likely to be involved in fatal motorcycle accidents and the findings do not show that behavior attitude changes occur among men. Considering that the target audience for motorcycle safety messages is men between the ages of 18 and 32, the results seem to indicate that women are impacted rather than the intended audience of men. This suggests that message and audience targeting strategies should be reevaluated. Future research is necessary in this area to determine what kinds of PSA messages are most effective to change behavior attitudes of men.

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Table 1

Means of Dependent Variables as a Function of Experimental Condition

Experimental Condition	Experienced Fear	Experienced Anger
Logical (N= 25)	1.31 (.84)	1.36 (.60)
Fear (N=28)	2.00 (1.15)	2.14 (1.23)
Humor (N=26)	1.62 (1.04)	1.65 (.95)
Control (N=26)	2.73 (1.68)*	2.51 (1.55)*

Note: Affect was measured using 7-point scales. Higher scores indicate more elicited emotion. Means are shown with standard deviation in parenthesis.

* Significant compared to all other conditions at $p<.05$

Table 2

Gender and Experimental Condition Interaction Effects on Elicited Anger, Elicited Fear, Elicited Humor, Perceived Effectiveness, and Behavior Attitude Change

Experimental Condition	Dependent Variables				
	Elicited Anger	Elicited Fear	Elicited Humor	Perceived Effectiveness	Behavior Attitude
Fear Group					
MEN	1.76	1.61	--	3.47	6.12
WOMEN	2.73*	2.61*	--	4.47*	6.80*
Humor Group					
MEN	--	--	4.22*	4.40*	5.97
WOMEN	--	--	2.44	2.77	6.62*

Note: Affect was measured using 7-point scales. Higher scores indicate more elicited emotion.

* Significant compared to all other conditions at $p<.05$

Appendix A

Phase I Survey

1. How old are you? (Circle)
   - 17 and younger
   - 18-21
   - 22-25
   - 26-29
   - 30 or older

2. Gender (Circle): MALE FEMALE

3. Rank (Circle):
   - E1-E4
   - E5-E6
   - E7-E9
   - WO1-WO5
   - O1-O3
   - O4 and above
   - CIVILIAN:_____
     pay grade

This set of items is designed to measure your sense of overall importance of the issue of **safe sex practices**: How important is this issue to you?

4. UNIMPORTANT	1	2	3	4	5	6	7	IMPORTANT
5. OF NO CONCERN	1	2	3	4	5	6	7	OF MUCH CONCERN
6. IRRELEVANT	1	2	3	4	5	6	7	RELEVANT
7. MEANS NOTHING	1	2	3	4	5	6	7	MEANS A LOT
8. DOESN'T MATTER	1	2	3	4	5	6	7	MATTERS
9. INSIGNIFICANT	1	2	3	4	5	6	7	SIGNIFICANT

This set of items is designed to measure your sense of overall importance of the issue of **motorcycle safety**: How important is this issue to you?

10. UNIMPORTANT	1	2	3	4	5	6	7	IMPORTANT
11. OF NO CONCERN	1	2	3	4	5	6	7	OF MUCH CONCERN
12. IRRELEVANT	1	2	3	4	5	6	7	RELEVANT
13. MEANS NOTHING	1	2	3	4	5	6	7	MEANS A LOT
14. DOESN'T MATTER	1	2	3	4	5	6	7	MATTERS
15. INSIGNIFICANT	1	2	3	4	5	6	7	SIGNIFICANT

This set of items is designed to measure your sense of overall importance on the issue of **boating safety**: How important is this issue to you?

16. UNIMPORTANT	1	2	3	4	5	6	7	IMPORTANT
17. OF NO CONCERN	1	2	3	4	5	6	7	OF MUCH CONCERN
18. IRRELEVANT	1	2	3	4	5	6	7	RELEVANT
19. MEANS NOTHING	1	2	3	4	5	6	7	MEANS A LOT
20. DOESN'T MATTER	1	2	3	4	5	6	7	MATTERS
21. INSIGNIFICANT	1	2	3	4	5	6	7	SIGNIFICANT

This section is designed to test your knowledge about the issues mentioned above. Answer each question to the best of your ability. For each statement below, circle **<u>one</u>** answer.

22. Who is most at risk to contract the HIV virus that can lead to AIDS?
    A) People bitten by mosquitoes
    B) Homosexuals
    C) Heterosexuals
    D) Don't Know

23. What is the most common cause of fatal boating accidents?
    A) Lack of boating skills
    B) Not wearing a life jacket
    C) Alcohol consumption
    D) Don't Know

24. What do you need in order to ride a motorcycle safely?
    A) A fast motorcycle
    B) An experienced rider with you for the first six months
    C) Proof of having passed an accredited motorcycle safety course
    D) Don't know

25. What is the only way to ensure that you do not contract a sexually transmitted disease?
    A) Wearing a condom
    B) Not having sexual contacts
    C) Knowing partners' history
    D) B and C
    E) Don't Know

26. You have to have a license to operate a motorized boat in every body of water in the United States:

    TRUE FALSE

27. What is considered proper motorcycle attire?
    A) Helmet
    B) Protective pants and jacket
    C) Reflective Clothing

D) A and B
E) B and C
F) A, B, and C
G) Don't know

The next series of questions are designed to assess your likelihood to take part in certain behavior. Pick a number between 1 and 7 in response to the following questions:

28. The next time you ride on a boat, how likely are you to wear a life vest?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

29. The next time you have an opportunity, how likely are you to have sex with a person you don't know?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

30. The next time you ride a motorcycle, how likely are you to wear a helmet?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

31. When you ride in an automobile, how likely are you to wear a seatbelt?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

32. How likely are you to drink more than six drinks of alcohol in one sitting?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

33. If you were to purchase a motorcycle, how likely would you be to attend a safety course before riding it?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

34. How likely are you or your partner to use a condom during sex?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

35. If you ride a motorcycle, how likely are you to wear reflective clothing?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

36. If you pilot a boat, how likely are you to drink alcohol?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

37. How likely are you to drink alcohol before driving/riding a motorcycle?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

Phase II Survey

This set of items is designed to measure your sense of overall importance of the issue of **motorcycle safety**: How important is this issue to you?

1. UNIMPORTANT	1	2	3	4	5	6	7	IMPORTANT
2. OF NO CONCERN	1	2	3	4	5	6	7	OF MUCH CONCERN
3. IRRELEVANT	1	2	3	4	5	6	7	RELEVANT
4. MEANS NOTHING	1	2	3	4	5	6	7	MEANS A LOT
5. DOESN'T MATTER	1	2	3	4	5	6	7	MATTERS
6. INSIGNIFICANT	1	2	3	4	5	6	7	SIGNIFICANT

The next items are designed to assess your reaction to televised public service announcements regarding motorcycle safety.

7. When you saw the commercial about motorcycle safety, how did it make you feel? Circle the number to indicate what extent you felt:

Angry	NOT AT ALL	1	2	3	4	5	6	7	VERY MUCH
Fearful	NOT AT ALL	1	2	3	4	5	6	7	VERY MUCH
Annoyed	NOT AT ALL	1	2	3	4	5	6	7	VERY MUCH
Scared	NOT AT ALL	1	2	3	4	5	6	7	VERY MUCH
Amused	NOT AT ALL	1	2	3	4	5	6	7	VERY MUCH
Irritated	NOT AT ALL	1	2	3	4	5	6	7	VERY MUCH
Afraid	NOT AT ALL	1	2	3	4	5	6	7	VERY MUCH
Peaceful	NOT AT ALL	1	2	3	4	5	6	7	VERY MUCH
Happy	NOT AT ALL	1	2	3	4	5	6	7	VERY MUCH

8. This item is designed to determine how well the motorcycle safety commercials communicated a message to you. Circle the number that indicates what extent you felt the commercial is best described by the following words:

UNREALISTIC	1	2	3	4	5	6	7	REALISTIC
FORGETTABLE	1	2	3	4	5	6	7	MEMORABLE
NOT EFFECTIVE	1	2	3	4	5	6	7	EFFECTIVE
ANNOYING	1	2	3	4	5	6	7	ENJOYABLE
NOT PERSUASIVE	1	2	3	4	5	6	7	PERSUASIVE

This section is designed to test your knowledge about the issues mentioned in the motorcycle safety commercials. Answer each question to the best of your ability. For each statement below, circle **<u>one</u>** answer.

9. What do you need in order to ride a motorcycle safely?

A) A fast motorcycle
B) An experienced rider with you for the first six months
C) Proof of having passed an accredited motorcycle safety course
D) Don't know

10. What is considered proper motorcycle attire?
A) Helmet
B) Protective pants and jacket
C) Reflective Clothing
D) A and B
E) B and C
F) A, B, and C
G) Don't know

The next series of questions are designed to assess your likelihood to take part in certain behavior. Pick a number between 1 and 7 in response to the following questions:

11. The next time you ride a motorcycle, how likely would you be to wear a helmet?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

12. If you were to purchase a motorcycle, how likely would you be to attend a safety course before riding it?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

13. If you ride a motorcycle, how likely are you to wear reflective clothing?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

14. How likely are you to drink alcohol before driving/riding a motorcycle?
UNLIKELY 1 2 3 4 5 6 7 LIKELY

Thank you for participating in our survey. We appreciate it!