The Mediating Effect of Self-Referencing in Consumer Responses: Effect of Message Recipient's Sex and Gender Role and Sex of Message Communicator(s) on Responses to and Evaluations of a Radio Ad

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LOYOLA UNIVERSITY OF CHICAGO

THE MEDIATING EFFECT OF SELF-REFERENCING IN CONSUMER RESPONSES: EFFECT OF MESSAGE RECIPIENT'S SEX AND GENDER ROLE AND SEX OF MESSAGE COMMUNICATOR(S) ON RESPONSES TO AND EVALUATIONS OF A RADIO AD

MASTER'S THESIS IN CANDIDACY FOR THE MASTER'S DEGREE OF APPLIED SOCIAL PSYCHOLOGY

DEPARTMENT OF PSYCHOLOGY

BY

ELKE LIEWALD

CHICAGO, ILLINOIS

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CHAPTER 1
INTRODUCTION

Costs for national advertising are extremely high, so advertisers want to ensure that their goal of persuasion is achieved. Advertisements attempt to create a specific impression of a product which will change or reinforce the targeted group's attitudes, ultimately producing sales (Lunz, 1983). Advertisers want the audience to identify with the spokesperson and to perceive the brand as appropriate for themselves (Debevic & Iyer, 1986).

The type of spokesperson used in an advertisement has been shown to have an effect on heightening consumer awareness and recall and achieving a perceptual restructuring of a brand or product (Frieden, 1984; Kamen, Azhari, & Kragh, 1975). Whipple and Courtney (1985) and Debevic and Iyer (1986) both found that spokesperson's gender alters the gender image of brands. Their results provide evidence that each gender prefers brands with same sex images. Whipple and Courtney (1985) also found that women are "somewhat" accepting of brands they perceive as masculine, but men do not "readily" accept brands they perceive as feminine.

Research concerning the influence of message recipient's sex in the context of marketing and consumer choices is limited and has come to conflicting conclusions.
In the past it was a widely held belief among psychologists that women were more persuadable than men (Aronson, 1972; McGuire, 1969). Eagly (1978) reviewed the literature concerning sex differences in persuasability and came to the conclusion that there is no empirical support for the proposition that women are inherently more influencable than men. Consumer and marketing studies have examined both the influence of biological sex and sex-role concept in consumer behavior and have generally found that biological and sex-role concept of message recipients are good predictors of product use, media use, product perception, product sex-typing, and advertising recall (Allison, Golden, Mullet, & Coogan, 1980; Gentry & Haley, 1984; Golden, Allison, & Clee, 1979). However, most of these studies examine the influences of message recipient's sex (i.e., biological and sex-role concept) and gendered advertising portrayals (i.e., gender-stereotyped and counterstereotyped message communicators) on consumer outcomes, and have not focused on message communicators in gender-neutral roles. Measures of sexual self-concept (gender schema) have not commonly been examined in relation to advertising outcomes (Gentry & Haley, 1984). Most consumer and marketing studies have focused on women's roles in advertising, and people's reactions to these roles based on feminist or traditional orientations (McIntyre, Hosch, Harris, & Norvell, 1986). Not much is known about consumer reactions to spokespersons of one sex or the other.
The interaction between sex of spokesperson and sexual identity (both biological and gender role concept) of message recipient seems worth studying for their implications for advertising strategies and for theoretical reasons (e.g., a possible general principle involving the interaction due to similarity of source and recipient).

As a result of divorce, desire to remain single, or having a working spouse, men are becoming an important market force for products that were traditionally targeted toward women (Rosen, 1987; Debevic & Iyer, 1986). Also, as women have increasingly entered the work force, they have become potential consumers for products that were traditionally marketed to men (e.g., credit cards and beer). With a change in men's and women's buying patterns coupled with evidence that the sex of spokesperson alters brand image and preference, it seems that research concerning message communicator's and message recipient's sex is vital in understanding what combinations are most effective in creating a specific impression that the targeted audience can identify with.
CHAPTER 2
THEORETICAL PERSPECTIVES

There are several theories and message processes that predict that individuals would prefer brands with same sex images and same sex communicators. One such process is self-referencing. Self-reference can be thought of as a process involving the schema of self in which there is an interaction between previous experience with personal data and new stimulus input (Rogers, Kuiper, & Kirker, 1977). The central aspect of self-reference is that the self acts as a background or point of reference against which incoming data are interpreted and coded. The self is seen as a superordinate schema that is deeply involved in the processing, interpretation, and memory of personal information and information about others (Kuiper & Rogers, 1979).

From both cognitive and social psychological perspectives, the self can be construed as a person's mental representation of his or her own personality that is formed through experience and thought, and is encoded into memory alongside mental representations of other objects in the physical and social world. (Kihlstrom, Albright, Klein, Cantor, Chew, & Niedenthal, 1988). Mental representations of the self include abstract information about the person's
attributes (semantic knowledge) and concrete information about the person's thoughts, actions, and experiences (episodic knowledge).

The theory of self-reference was derived from schema theory. It is believed that we have "self-schemata" that are knowledge structures about the self, which are developed from past experience (Markus, 1977). These knowledge structures organize and guide the processing of self-related information. Markus and Smith (1981) went on to propose that the self is the main cognitive anchor through which all stimulus information is initially processed. Self-referencing can occur when processing information about other people or about specific phenomena, as in the "medical school syndrome," where students tend to see themselves in varying states of illness described by the lecturer.

Self-reference is thought to be a predominant process in encoding information (Ganellen & Carver, 1985; Klein & Kihlstrom, 1986; Maki & McCaul, 1985; Rogers et al., 1977; Wells, Hoffman, & Enzle, 1984). The involvement of the self in processing makes the input full and rich because of the availability of an immense amount of previous experience and information paths in the self, including such information as physical appearance, demographic attributes, dispositions, and autobiographical memories. How is it possible for the self to include the vast amount of information that is encoded pertaining to the self? McGuire (1984) proposed that the self
may include only those attributes that distinguish ourselves from others. Regardless of one's exact vision of what construes the self, few would disagree that stimuli processed by self-referencing should be highly memorable.

According to the elaborative processing principle of memory functioning (Anderson & Reder, 1979; Craik & Lockhart, 1972; Jacoby & Craik, 1979) accessibility of a memory is a function of the extent to which stimulus information makes contact with preexisting knowledge structures during encoding. Elaborate encoding, in which stimulus events are linked to a number of other traces in memory, allows multiple routes by which the memory trace can be accessed and retrieved. Thus, self-referencing produces a more elaborate memory trace than other encoding processes such as semantic encoding because the self as a memory structure forms a highly elaborate memory structure that may form many links between the new stimulus and previous information about the self (Klein & Kihlstrom, 1986). Several studies have supported the notion that the self may shape our views of others (Debevic & Kernan, 1987; Debevic & Iyer, 1988; Endo, 1984; Kuiper, 1981; Kuiper & Rogers, 1979; Maki & McCaul, 1985). The self functions as a fixed cognitive reference point and is involved in evaluations of other people. For example, people are not really perceived as fat unless they are fatter than we are. Comparisons of others to the self form the basis of Leon Festinger's (1954) social comparison theory. Furthermore, Niedenthal, Cantor,
and Kihlstrom (1985) concluded from recent work that many judgments and choices are mediated by social comparison, people comparing themselves to others who have made a particular choice. For example, when we are in the consumer role of buying a new car we must ask ourselves if we are the type of person who would own a fire engine red convertible sportscar or a paneled station wagon. In cognitive terms, individuals match their own self concept with their concepts of others who have selected various personal options, a process of prototype matching. This comparison process appears to be involved in consumer decision making. The implicit, unconscious or conscious, and automatic self-other comparison that is the basis of self-referencing seems to be an integral part of how we process information about others.

The self is believed to be an important element in commercial persuasion since most consumer purchases are made for oneself or one's family (Debevec & Iyer, 1988). As consumers, we often use the "self" as a reference in judging the attractiveness and usefulness of an advertised product or service. Presumably, if one is able to relate to the commercial message, the ad should be attended to, processed, and in the long run, effective in persuasion. Self-referent judgments positively influence recall and learning (Kuiper & Rogers, 1979; Rogers et al., 1977). It seems that marketers encourage their targeted audience to make self-referent judgements when processing an advertisement by designing it so
that the audience can relate to the people and/or situations in the ad.

Research that has examined self-reference in the context of advertising is very limited. However, one might expect that the self-reference effect (SRE), increased recall and learning due to relating information to the self, found in past research would emerge when individuals self-reference in commercial contexts (Debevic & Iyer, 1988; Klein & Kihlstrom, 1986; Klein & Loftus, 1988; Kuiper, 1981; Maki & McCaul, 1985; Rogers, 1977; Rogers et al., 1977). Debevic and Iyer (1988) viewed self-referencing as a mediator between message recipients' exposure to sex-role portrayals in a message and message recipients' subsequent attitudes, behaviors, and intentions. They found that the sex of the communicator may "genderize" a product, thus increasing same sex self-referencing.

Part of one's self concept is one's gender identity which contains self-referential knowledge about gender and gender role behavior. As we develop from children to adults, we learn content-specific information, the particular behaviors and attributes that are linked with masculinity and femininity in our own culture. We use this heterogeneous network of sex-related associations to evaluate and assimilate new information (Bem, 1981). Thus, a gender schema is evolved. A schema is a cognitive structure, a network of associations that organizes and guides one's perceptions.
What we perceive then is a product of the incoming information and the existing schema (Neisser, 1976). Individuals who have a generalized readiness (cognitive availability) to process information with a "particular schema should be able to encode schema-consistent information quickly; they should organize information in schema-relevant categories, they should make highly differentiated judgements along schema-relevant dimensions, and when given a choice, they should spontaneously choose to make discrimination along those same dimensions" (Bem, 1981, p. 355). Thus, a message recipient with a feminine gender role orientation, for example, would include feminine gender role attributes in her or his self-schema, and would find herself or himself more similar to, identify with, and be more persuaded by communicators who are females or act in a traditionally feminine manner (e.g., tender, warm, understanding) than by communicators who are more traditionally masculine. The Bem Sex Role Inventory (BSRI) has been routinely used to measure how stereotypically masculine or feminine subjects evaluate themselves. Subjects indicate the extent to which each of the 60 attributes describes themselves and are categorized into one of the following gender types according to their self ratings: feminine (high femininity, low masculinity), masculine (high masculinity, low femininity), androgynous (high masculinity, high femininity), and undifferentiated (low masculinity, low femininity).
Jose (1989) studied the role of gender and gender role similarity in readers' identification with story characters and found an interaction between gender role of reader (measured by BSRI) and gender role behavior of character. Specifically, androgynous and undifferentiated readers identified equally with both masculine and feminine characters, masculine readers identified more strongly with masculine characters than with feminine characters, and feminine readers identified more strongly with feminine characters than with masculine characters. A similar dynamic can be expected to occur in consumer situations. For example, message recipients with masculine gender role schemas would be expected to identify with male or masculine message communicators.

According to several social psychological theories, how deeply a message is processed is partly due to influences of the message communicator. In advertising situations where the source is considered familiar, self-referencing may act as a cue for accepting messages and conclusions without centrally or systematically considering the arguments. According to Petty and Cacioppo's (1981) elaboration likelihood theory, attitude change can be the result of peripheral "persuasion cues." "Persuasion cues are factors or motives inherent in the persuasion setting that are sufficient to produce an initial attitude change without any active thinking about the attributes of the issue or the object under consideration"
(Petty & Cacioppo, 1981, p. 256). Chaiken's (1980) theory of systematic versus heuristic processing and Petty and Cacioppo's (1981, 1986) theory concerning cognitive and noncognitive factors in message processing both suggest that individuals may adopt or reject attitude positions on the basis of cognitive heuristics (i.e., this person is similar to me, so I will believe what he/she is saying) rather than carefully analyzing the relevant information (Baron & Graziano, 1991). Thus, message recipients may process more peripherally and automatically when exposed to a same sex communicator. So, being exposed to a same sex communicator may enhance both peripheral and central processing.

In the 1950s, Hovland and his colleagues at Yale University studied the determinants of attitude change in persuasive communication. The source characteristic "familiarity" was one of the determinants studied. They found that familiar sources are more likely to be persuasive because people seek the approval of similar people more than of dissimilar people (Hovland, Janis, & Kelley, 1953; Sherif & Sherif, 1953; Zajonc, 1968). It may be that individuals perceive themselves as more similar to people of the same sex, and thus may be more persuaded by communicators of the same sex.

Kelman's (1961) theory of social influence proposes that there are three processes of social influence, two of which pertain to the present study. Both identification and
internalization could operate in advertising situations as influence processes. A message recipient would be more likely to use identification if he or she found the message communicator to be an attractive object (i.e., occupies a desired role or possesses characteristics that the message recipient admires). Internalization occurs when an individual accepts influence because he or she finds it useful as a solution of a problem or because it matches his or her own values.

One might suggest that the message recipients using the identification process in advertising settings would show greater acceptance of influence with same sex communicators than with opposite sex communicators, since they may be more likely to desire the role or want to be like communicators of the same sex. It could also be suggested that message recipients using the internalization process would be more accepting of influence under conditions with same sex communicators than with opposite sex communicators since message recipients may see the advertised object of greater use or fitting their values when promoted or used by same sex communicators.

The bias in processing in-group and out-group differences also supports the notion that individuals prefer brands with same sex images (Endo, 1984). One is apt to find small differences between oneself and others who share many common features; sex may be a feature that is consciously or
unconsciously processed as an in-group or out-group feature. Conversely, one also tends to perceive more variety within in-groups than within out-groups. Thus, individuals may be able to identify more with same sex communicators because of a perception that individuals of the same sex share more common features than do opposite sex communicators (Endo, 1984).

Social learning theory is also applicable to the advertising situation since it focuses on modeling (Lunz, 1983). Advertisers attempt to create a certain impression so that the target group will identify with the spokesperson or with the brand. The message will then be attended to and processed more extensively. It would appear that individuals would be able to identify with same sex communicators more than opposite sex communicators, and thus model same sex communicators more than opposite communicators. Message recipients may model and be more likely to expect reinforcement from imitating a model's behavior with a same sex communicator rather than with an opposite sex communicator.

Another aspect of social learning that advertisers incorporate in their ads is reinforcement. "The purpose of an advertisement is to reinforce the model's behavior of purchasing the advertised product in an implicit or explicit manner" (Lunz, 1983, p. 13). So, it may be more rewarding to agree with someone more similar than disimilar to you; this perceived similarity or dissimilarity could be due to the
communicator's sex.

In summary, the aforementioned theories lay the foundation for the present study. Advertisers spend billions of dollars every year trying to influence their targeted audiences through their spokespeople. So, they want to ensure they are using the appropriate spokesperson for the product since the spokesperson has been shown to affect the image of a brand or product. Specifically, it appears that message recipients may be more influenced when exposed to same sex communicators rather than opposite sex communicators.

In advertising situations, the self is thought to be an important reference in judging the attractiveness and usefulness of a product or service. The self-reference process is thought to be a predominant process in encoding information, especially information about others. So, in advertising situations it would be expected that people would attempt to self-reference (compare the communicator to themselves). If the communicator is seen as similar (high self-referencing), people would presumably have more positive evaluations of the product and spokesperson and recall the ad more easily, than when exposed to a dissimilar communicator. The sex of the communicator appears to influence the perceived similarity of the communicator, influencing the self-reference process, which in turn influences reactions to the communication. This influence of sex is not surprising since one's gender schema is part of the self schema, which is used
to process information.

The present study examined the influence of message recipient's sex, message recipient's gender role type, and spokesperson's gender on responses to a commercial message, with self-referencing hypothesized to be the mediating process.
CHAPTER 3
THE PRESENT STUDY

In the present study to avoid bias due to familiarity with the attitude object (brand), a radio commercial for a fictitious toothpaste (see appendix A) was presented to male and female subjects under three conditions (i.e., male spokesperson, female spokesperson, male and female spokespersons). For each of the three conditions, there were two radio ads produced with different voices so that it could be checked if effects were possibly due to the specific spokesperson's voice. Toothpaste was chosen because it was found to be a gender neutral product in Simmon's (1984) research; Simmons (1984) found that 93% of males and 94% of females use toothpaste (cited in Debevic & Iyer, 1986). A condition with both male and female spokespersons giving the message about toothpaste was included because Whipple and Courtney (1985) found, in addition to the finding that each gender prefers brands with the same-sex image, that the use of a male-female pair of communicators significantly increases source credibility and likability, and intention to buy a brand.

Self-referencing was manipulated through the radio message by including the essential features of self-
referencing (i.e., self-awareness and personal concern about the self) in the radio commercial (Debevic & Kernan, 1987). The present study did not attempt to induce self-referencing by merely asking subjects to relate the advertisement to their own experiences. Shavitt and Brock (1984) attempted to induce self-relevant thought by asking subjects to relate an ad to their own experience (cited in Debevic & Iyer, 1988). Shavitt and Brock (1984) found that subjects under this condition did not have significantly more self-relevant thoughts than subjects who were simply told to view an ad. It was concluded that people self-reference information spontaneously and automatically, not necessarily only when asked to.

The Bem Sex Role Inventory (BSRI) was included in the present study to measure gender roles and gender schemas in message recipients since these constructs are believed to influence consumer behavior (purchase intention and the recall and evaluation of communicator, radio ad, and product). Past studies have not examined the mediating influences of gender schema and self-referencing together on consumer behavior and reactions.
CHAPTER 4

RESEARCH HYPOTHESES

Several hypotheses will be tested, based on the aforementioned research and theories concerning advertising, encoding processes, message source, and message recipient. First, is hypothesized that message recipients will have higher scores on the self-reference scales when exposed to messages containing same-sex communicators (same-sex condition) than opposite-sex communicators (opposite-sex condition); message recipients who are exposed to a message containing both same-sex and opposite-sex communicators (both sexes condition) are expected to score higher on the self-referencing scale than subjects in the opposite-sex communication condition, but lower than subjects in the same-sex communication condition.

Second, it is hypothesized that message recipients who have higher scores on the self-reference scales will evaluate the communicator(s), radio ad, and brand more positively and will also be more willing to try and to buy the brand. Self-reference scores are expected to positively correlate with willingness to try and to buy the brand and with positive evaluations of communicator(s), radio ad, and brand. Also, it is hypothesized that message recipients who obtain higher
self-reference scores will subsequently recall more facts from the message than will those obtaining lower self-reference scores. Self-reference scores and recall of facts from the message are expected to positively correlate.

It is also hypothesized that self-referencing is a mediating factor between the independent variable (interaction of sex of communicator and message recipient) and the dependent variables (evaluations of the communicator, radio ad, and brand, willingness to try and buy brand, and the recall of facts concerning the message). For example, female subjects are expected to score higher than male subjects on the self-referencing measure when exposed to the female spokesperson condition and subsequently female subjects are expected to evaluate the female communicator, radio ad, and brand more positively, recall more facts from the message, and be more willing to try and buy the brand than male subjects in the female communication condition.

Concerning the BSRI scores, subjects who gender type themselves as "masculine" or "feminine" are expected to score higher on the self-reference scale when exposed to messages containing communicators who match their gender type than when exposed to messages containing communicators who do not match their gender types. Subjects who gender type themselves as androgynous are expected to score higher on the self-reference scales when exposed to messages containing both male and female communicators rather than when exposed to messages
containing either male or female communicators. Subjects who gender type themselves as undifferentiated are expected to self-reference equally between the conditions of communicators (male communicator, female communicator, male and female communicators).

It is hypothesized that self-referencing is a mediating factor between the independent variable (interaction of message recipient's gender role type and communicators' sex) and the dependent variable (evaluations of spokesperson(s), brand, and radio ad, willingness to try and buy brand, and recall of facts from the message). Specifically, it is hypothesized that subjects who gender type (i.e., masculine or feminine) themselves are expected to have higher self-reference scores with the same-sex communicators than with opposite-sex communicators. Furthermore, subjects who gender type themselves are expected to evaluate the communicator, radio ad, and brand more positively, be more willing to try and buy the brand, and recall more facts from messages containing same-sex communicators than for messages containing male and female communicators or opposite-sex communicators. Androgynous subjects are expected to have higher self-reference scores when exposed to messages with both male and female spokespersons than when exposed to messages containing either male or female spokespersons. Consequently, androgynous subjects are expected to evaluate the communicator, radio ad, and brand more positively, be more
willing to try and buy the brand, and recall more facts when exposed to messages containing both male and female communicators than messages containing either male or female communicators. Undifferentiated subjects are expected to evaluate the three different conditions of communications (male communicator, female communicator, male and female communicator) similarly to each other; the variance between evaluations of the three different conditions is not expected to be significantly different for evaluations of communicator, radio ad, and brand, willingness to try and buy brand, self-reference scores, and recall of facts from message.

It will be interesting to see how sex of message recipients versus their gender role types influences self-reference scores, recall of the radio ad, likeliness to buy and try brand, and evaluations of communicator, radio ad, and brand. It is expected that gender role types will be more influential than subject's sex since gender roles indicate our gender schema with which we process information. Gender role types are expected to account for more variance in correlations with self-reference scores and evaluations of all aspects of the radio ad than subject's sex.
CHAPTER 5

METHOD

Sample

The sample was composed of 149 male and 186 female undergraduate psychology students at Loyola University of Chicago who received course credit for participating.

Measurement Instruments

In order to test the aforementioned hypotheses, an eight section questionnaire (see appendix B, appendix C, and appendix D) was constructed to collect demographic information and to measure recall of message, extent to which subjects self-reference, purchase interest, and evaluations of spokesperson or spokespeople, of brand, and of radio ad.

To measure recall of message, subjects were asked six open-ended questions concerning information contained in the message (toothpaste radio commercial). The extent to which subjects self-reference was measured through four scales using a 7-point semantic differential format. Debevic and Iyer (1988) created and used these four scales to measure self-referencing and found that all four measures were significantly correlated to one another (p's < .01) with a Cronbach's alpha of .88, suggesting that the measures can be combined into a reliable composite measure of self-
referencing. In the present study, these four items comprising the self-reference scale had a reliability coefficient alpha of .80.

Purchase interest and evaluations of spokesperson or spokespeople, brand, and radio ad were measured on a bipolar 7-point semantic differential scale containing two items, fourteen items, five items, and five items, respectively. Reliabilities were computed for purchase interest, six recall questions, evaluations of spokesperson(s), brand, and radio ad before forming composite indices with the items. All the spokesperson(s) items except "original" held together to form a reliable thirteen item spokesperson(s) scale (coefficient alpha=.85). Purchase interest was measured by the two items "likely to buy brand" and "likely to try brand." These two items had an extremely low reliability coefficient (alpha=-.08), so they were analyzed separately. The five items measuring the evaluation of brand had an acceptable reliability coefficient (alpha=.77), so all five items were combined to measure evaluations of the brand. Dropping the item "effective," the remaining four items evaluating the radio advertisement had an acceptable reliability coefficient (alpha=.77),

The recall measure was intended to be the compilation of ten pieces of information assessed through six questions (see appendix E for correct responses). Subjects' recall of each of the ten pieces of information was rated as follows by
two independent raters: 0 points for "didn't know answer", 1 point for "possibly knew answer/close", and 2 points for "correct answer." Inter-rater reliability was 97%; inconsistencies between raters were resolved through discussion, to reach consensus on each item. A reliability check performed on the ten recall answers revealed the absence of a strong relationship among the ten items (reliability coefficient alpha=.57). For this reason, each item was treated separately when recall was analyzed.

Two questionnaires were constructed for subjects who were exposed to the male and female communicators condition. Half of the subjects randomly received questionnaires in which the female spokesperson evaluation and self-reference scale preceded the male spokesperson evaluation and self-reference scale (see appendix C). The other half randomly received questionnaires in which the male spokesperson evaluation and self-reference scale preceded the female spokesperson evaluation and self-reference scale (see appendix D).

The last page of the questionnaire contained the BSRI. This instrument requires subjects to indicate the extent to which each of 60 attributes describes themselves on a 7-point scale (1=never or almost never true, 7=always or almost always true). The BSRI consists of two 20-item scales that reflect American culture's definition of masculinity (e.g., independent, assertive) and of femininity (e.g., affectionate, sympathetic) and twenty neutral items (e.g., conscientious,
moody). Bem (1974) demonstrated that the masculinity and femininity scales are orthogonal, that the BSRI is internally consistent (coefficient alpha > 0.8), that the test-retest reliability is high (r > 0.9), and that high scores do not reflect general tendencies to respond in a socially desirable manner. Qualls (1987) found the BSRI's reliability to be high (alpha > 0.85) and presented evidence for its convergent and discriminant validity. On the basis of subjects' self evaluations they were placed into the following categories: masculine, feminine, androgynous, and undifferentiated.

Yarnold's (1990) principal components model (PCM) was used to classify subjects into the four categories. The first step of the PCM involves standardizing instrumentality (masculinity scores) and expressiveness (femininity scores). Then a two-dimensional space is formed by the orthogonal intersection at the means of the standardized masculinity and femininity scores. Subjects who score higher than the mean on both masculinity and femininity items are categorized as androgynous. Conversely, subjects who score below the mean on both masculinity and femininity items are categorized as undifferentiated. Those who score above the mean on masculinity items and below the mean on femininity items are categorized as masculine. Finally, subjects who score above the mean on femininity items and below the mean on masculinity items are categorized as feminine.

However, Yarnold (1990) did not address how to find the
means of instrumentality (masculinity dimension) and expressiveness (femininity dimension), used to categorize subjects, when a sample did not have equal male and female subjects. This is a concern where there is a large difference in the male to female ratio, because the masculinity and femininity means that are used to classify subjects will both be skewed in opposite directions. Since in the present study there were 186 females and 149 males, it was decided to not adjust the mean since there was not a too large difference in the number of male and female subjects and the overall number of subjects is substantial. See table 1 for the distribution of subjects into gender role types using Yarnold's (1990) PCM.

Design and Procedure

The experimental design was a 2 (sex of message recipient) X 3 (message with a male spokesperson, female spokesperson, or both a male and female spokesperson) X 2 (version of communicator or communicators) complete factorial design. Two versions were created for each condition using different actors and actresses to control for possible effects due to which specific male or female voice or which male and female combination subjects were exposed to. Concerning the procedure, the experimenter attempted to arrange sessions so that approximately equal numbers of male and female subjects participated in each session by limiting the number of subjects on both the male and female sign-up sheets to ten each, with a maximum of twenty subjects in each session.
After all the subjects were seated the experimenter introduced the manipulation in the following manner. "You are participating in a copy test for a radio commercial that is in early stage of development. After listening to the commercial you will complete this questionnaire that I will hand out now. Please only read and sign the top sheet right now. Relax and listen to the radio commercial." The experimenter then turned on the tape recorded 30-second toothpaste commercial containing the male spokesperson, female spokesperson, or both male and female spokespersons. Following the tape recorded message, subjects were asked to complete the eight-section questionnaire. After subjects completed the questionnaire, they were given a debriefing form explaining the experiment and expected results.
CHAPTER 6
RESULTS

The first hypothesis concerns the interaction between message recipient's sex and communicator's sex and its relationship to self-referencing. To test this hypothesis, a 2 (sex of subject) X 3 (sex of communicator or communicators) by 2 (version of communicator or communicators) analysis of variance was performed with the self-reference scores being the dependent variable. The version of communicator(s) factor was included in the analysis of variance so that it could be determined whether possible effects were due to which specific male or female voices or which male and female combination they were exposed to since there were two radio ad tapes produced for each communicator condition using different actors and actresses. The main effects, two-way interactions, and three-way interactions were not significant. See table 2 for the means of self-reference scores by sex of communicator(s) and sex of message recipient from the ANOVA. Also see table 3 for the ANOVA summary table. Planned orthogonal contrasts, derived from the first hypothesis, of the self-reference scores by the interaction of communicator and message recipient's sex were also nonsignificant.

The second hypothesis concerning the correlation of
self-reference scores with willingness to try and buy brand, recall of facts from the message, and evaluations of communicator(s), radio ad, and brand was tested. There was a statistically significant correlation as expected between self-reference scores and the item "likely to buy brand" ($r = .24$, df=331, $p < .01$, 1-tailed). Evidently, people who self-referenced more were more willing to purchase the brand of toothpaste being advertised. However the correlation shows that this is not a strong effect. Specifically, the two variables share only about 6% common variance.

The correlation between self-reference scores and evaluations of the radio advertisement was unexpectedly negative ($r = -.21$, df=331, $p < .01$, 2-tailed), suggesting that people who self-referenced more reported less positive evaluations of the radio advertisement in general.

As expected, self-referencing scores positively correlated with responses to question 4 on the recall items ($r = .11$, df=331, $p < .05$, 1-tailed). The question is "In what plant is the main effective ingredient of this brand found?" and the answer is "sanguinaria." The correlation between self-referencing and recalling such a specific item could be due to the deeper encoding that results from self-referencing. Responses to question 4 from the recall items were positively skewed (skewness=2.24), which would be expected to attenuate the correlation. If this item were more sensitive (i.e., allowed for finer grain distinctions in recall), perhaps it
would have shown a stronger correlation.

There was also an unexpected negative correlation between self-referencing and responses to the questions "What was the name of the brand in this radio ad?" \(r=-.14, p<.01,\) 2-tailed). This item was the easiest recall item to remember with 90.1% receiving 2 points, .3% receiving 1 point, and 9.3% receiving 0 points. Evidently, those who self-referenced more were actually less likely to recall this "easy" information.

Correlations between self-reference scores and the following dependent variables were nonsignificant: likelihood of trying brand \(r=-.10, df=331, p=n.s.\), evaluation of spokesperson(s) \(r=-.02, df=331, p=n.s.\), evaluation of brand \(r=-.06, df=331, p=n.s.\), recall of question 2a (ability to freshen breath) \(r=.02, df=331, p=n.s.\), recall of question 2b (ability to whiten teeth) \(r=-.05, df=331, p=n.s.\), recall of question 2c (ability to control tartar) \(r=-.05, df=331, p=n.s.\), recall of question two 2d (ability to reduce tartar) \(r=.06, df=331, p=n.s.\), recall of question 3 (8 out of 10 dentists recommend) \(r=.02, df=331, p=n.s.\), recall of question 5a (anti-plaque abilities) \(r=.05, df=331, p=n.s.\), recall of question 5b (anti-tartar abilities) \(r=.05, df=331, p=n.s.\), and recall of question 6 (main ingredient used in Europe) \(r=-.04, df=331, p=n.s.\).

To test the hypothesis that self-referencing is a mediating factor between the independent variable (interaction of sex of communicator and message recipient) and the
dependent variables (evaluations of the communicator, radio
ad, and brand, willingness to try and to buy the brand, and
recall of facts concerning the message), Baron and Kenny's
(1986) method of testing mediator variables using three
regression equations was used. Baron and Kenny (1986) propose
that 'a variable functions as a mediator when it meets the
following conditions: (a) variations in levels of the
independent variable significantly account for variations in
the presumed mediator (i.e., path a), (b) variations in the
mediator significantly account for variations in the dependent
variable (i.e., path b), and (c) when paths a and b are
controlled, a previously significant relation between the
independent and dependent variables is no longer significant,
with the strongest demonstration of mediation occurring when
path c is zero" (1176). According to Baron and Kenny (1986),
to test for mediation the three following regression equations
should be tested: first, regress the mediator on the
independent variable; second, regress the dependent variable
on the independent variable; and third, regress the dependent
variable on both the independent variable and on the mediator.

These three regression equations provide the tests of
the three links of the mediational model. According to Baron
and Kenny (1986) the following conditions must hold to
establish mediation: the independent variable must affect the
mediator in the first regression; the independent variable
must be shown to affect the dependent variable in the second
equation; and the mediator must affect the dependent variable in the third equation. If all three of these conditions hold in the predicted direction, then the effect of the independent variable on the dependent variable must be less in the third regression equation than in the second. Finally, perfect mediation holds if the independent variable has no effect when the mediator is controlled.

In the present regression analyses, for the interaction of sex of communicator and message recipient, the communication condition with both male and female communicators was excluded since it is not possible to match sex of communicator and subject and they were not of central interest in the original hypothesis. The interaction (independent variable) categorizes subjects into matched (sex of message communicator and message recipient match) and unmatched (sex of message communicator and message recipient do not match) groups.

In the first regression, regressing self-reference scores onto the independent variable did not show significant effects \((R^2=.004, F(1,229)=.98, p=n.s.)\) (see table 4). The independent variable does not predict self-referencing. The second regression equation regressed the dependent variables onto the independent variable. The independent variable was not found to predict any of the dependent variables (see table 4).

In the third regression equation, the dependent
variables were regressed onto both the independent variable and the mediator (see table 4). Two out of four of the variables that were significant in the aforementioned correlational analyses were significant in the third regression analyses. The independent variable and mediator were significantly related to evaluations of the radio advertisement, $F(2,228)=5.78, p=.0002$, presumably mostly through the relationship between self-reference scores and evaluations of the radio ad. The correlation coefficient between self-reference scores and evaluations of the radio ad was $-0.26 (p<.001)$, while the correlation coefficient between the independent variable and the radio ad was $0.02 (p=n.s.)$ in the regression analysis.

As expected, the independent variable and mediator were also significantly related to likelihood of buying brand, $F(2,228)=5.28, p=.006$, presumably mostly through the relationship between self-reference scores and likeliness of buying the brand. This is because the correlation between self-reference scores and likeliness to buy brand was stronger ($r=.21, p=.001$) than the correlation between the independent variable and likeliness to buy the brand ($r=-.02, p=n.s.$) in the regression analysis.

Since not all of the analyses in the three regression equations were significant, the hypothesized mediational effect of self-referencing between the independent variable and dependent variables was not supported. According to Baron
and Kenny (1986) all three of the regression equations must be significant in the predicted direction to support the links of mediation.

In the third regression equation the mediator was the significant predictor of the dependent variables (i.e., evaluation of radio ad and likelihood of buying brand). The independent variable (matching between communicator's sex and message recipient's sex) did not add significantly to the prediction of these dependent variables. Regression equations two and three both concur that matching communicator's sex with message recipient's sex does not appear to influence the likelihood of buying the brand and recall of facts. Also, matching does not appear to influence the evaluations of communicator, brand, and radio ad.

The hypothesis concerning the relationship between self-prescribed gender schema types and self-reference scores was tested through a 4 (gender schema type) X 3 (sex of communicator or communicators) X 2 (version of communicator or communicators) analysis of variance, with the self-reference scores being the dependent variable. It was predicted that when the sex of the communicator(s) matched the message recipient's gender role type, subjects would have higher self-reference scores than when their gender role type did not match the sex of the communicator(s). Examining the means of self-reference scores in table 5, this matching effect only held true for subjects with androgynous gender role types.
Overall, androgynous subjects exposed to both a male and a female communicator had higher self-reference scores (mean=5.52) than subjects exposed to a male communicator (mean=5.42) or a female communicator (mean=5.34). Masculine and feminine subjects did not support this matching relationship. Overall, feminine subjects that were exposed to a female communicator had lower self-reference scores (mean=5.23) than subjects exposed to a male communicator (mean=5.40) or both the male and female communicators (mean=5.30). Finally, masculine subjects on average had lower self-reference scores when exposed to a male communicator (mean=5.52) than subjects exposed to a female communicator (mean=5.62).

The ANOVA also shows that there was an unexpected significant relationship between gender type and which "version of communicator(s)" subjects were exposed to (i.e., male spokesperson 1 or male spokesperson 2, etc), F(3,332=4.0, p=.008. See table 5 for means of self-reference scores by sex of communicator(s) and gender role type and table 6 for the ANOVA summary table. Which version of spokesperson(s) subjects were exposed to interacted with gender type to influence self-reference scores. This was analyzed using Duncan's multiple ranges test and will be discussed later.

Planned orthogonal contrasts were performed based on the original hypothesis concerning the relationship between gender type, sex of communicator(s), and self-reference scores. The
planned orthogonal contrasts of self-reference scores by the interaction of gender type and sex of message communicator(s) were not significant. The hypothesis that message recipients would have higher scores on the self-reference scales when exposed to messages containing spokesperson(s) that match their self-prescribed gender schema types than when exposed to messages not containing spokesperson(s) that match their gender type was not supported.

Baron and Kenny's (1986) regression method was applied to test the mediating effect of self-referencing between the independent variable (interaction of message recipient's gender role type and communicator's sex) and the dependent variables (evaluations of spokesperson(s), brand, and radio ad, willingness to try and buy brand, and recall of facts from the message). For the interaction of message recipient's gender role type and message communicator's sex, undifferentiated subjects were excluded from the regression analyses because they were not expected to vary across message communicator(s) and were not of central interest in the hypothesis concerning the mediation effect. The interaction categorizes subjects into matched (i.e., female communicator and feminine message recipient, male communicator and masculine message recipient, and both communicators and androgynous message recipient) and unmatched groups (all other combinations).

First, self-reference scores were regressed onto the
independent variable; the overall regression equation was not significant, \( R^2 = .0004, F(1,262) = .14, p = \text{n.s.} \) (see table 7). The interaction of message recipient's gender type and communicator's sex did not predict self-reference scores. The second regression involved regressing the dependent variables onto the independent variables; the relationship between all these factors was not significant (see table 7). The interaction of message recipients's gender type and the sex of message communicator(s) did not predict evaluations of spokesperson(s), brand, and radio ad, intention to buy and try the brand, nor recall of facts from the message.

In the third regression equation the dependent variables were regressed onto both the independent variable and self-reference scores. Three out of four variables that were significant in the correlational analyses were significant in the third set of regression analyses. The independent variable and mediator were significantly related to and able to predict evaluations of the radio ad, \( F(2,262) = 8.67, p = .0002 \), presumably mostly through the relationship between self-reference scores and evaluations of the radio ad; the correlation was greater between self-reference scores and evaluations of the radio ad \( (r = -.25, p = .001) \) than the correlation between the independent variable and evaluations of the radio ad \( (r = .04, p = \text{n.s.}) \) in the regression.

Also, the independent variable and the mediator were significantly related to and able to predict likeliness to buy
the brand, $F(2,261)=7.54$, $p=.0007$, presumably through the relationship between self-reference scores and evaluations of the radio ad since the relationship between self-reference scores and evaluations of the radio ad ($r=.23$, $p=.001$) was stronger than the relationship between the independent variable and evaluations of the radio ad ($r=-.02$, $p=n.s.$). The independent variable and mediator were significantly related to and able to predict responses to question one (name of brand) on the recall items, $F(2,261)=5.17$, $p=.006$. This is probably mostly due to the relationship between self-reference scores and responses to question one since in the regression the relationship between self-reference scores and responses to question one ($r=-.20$, $p=.001$) was stronger than the relationship between the independent variable and responses to question one ($r=-.02$, $p=n.s.$).

In the third regression equation, where there was a significant relationship between both the mediator and independent variable and dependent variables (i.e., evaluation of the radio ad, likelihood of buying brand, and responses to question one), the mediator was the significant predictor of the dependent variables. The independent variable (matching between communicator's or communicators' sex and message recipient's gender role type) did not add significantly to the prediction of these dependent variables. Regression two and three both concur that matching communicator's and communicators' sex with message recipient's gender role type
does not appear to influence likelihood of buying the brand and the recall of facts. Furthermore, matching does not appear to influence the evaluations of communicator(s), radio ad, and brand.

Because not all of the analyses in the three regression equations were significant, the hypothesis that self-referencing is a mediating factor between the independent variable (interaction of message recipient's gender role type and communicator's or communicators' sex) and evaluations of the spokesperson(s), brand, and radio ad, willingness to try and buy the brand, and recall of facts from the message was not supported. According to Baron and Kenny (1986), to support the mediational effect, all three of the regression equations must be significant in the predicted direction.

Two MANOVAs were performed to examine the direct effects of sex of communicator(s), sex and gender role type of message recipients, and version of communicator(s) on self-referencing and the dependent variables. The first MANOVA was constructed to examine the effects of sex of communicator(s), sex of message recipient, and version of communicator(s) on self-referencing and the dependent variables. The second MANOVA was constructed to examine the effects of sex of communicator(s), gender role type of message recipient, and version of communicator(s) on self-referencing and the dependent variables. For both MANOVAs, there was a significant interaction between sex of communicator(s) and
version for evaluations of spokesperson(s), $F(2,321)=3.41$, $p=.03$, responses to question 3 (8 out of 10 dentists recommend), $F(2,231)=5.86$, $p=.003$, and responses to question 4 (sanguinaria plant), $F(2,231)=3.51$, $p=.03$. Duncan's multiple range test showed a significant difference ($p<.05$) in evaluations of spokesperson between subjects who listened to female spokesperson version one (mean=5.10) and subjects who listened to the male and female spokespersons version two (mean=4.86).

Duncan's multiple range test also showed a significant difference ($p<.05$) between the following groups on question three: between subjects who listened to male spokesperson version one (mean=1.27) and those who listened to male and female spokespersons version one (mean=.83), between subjects who listened to male and female spokespersons version two (mean=1.41) and those who listened to male and female spokesperson version one (mean=.83), and finally between subjects who listened to male and female spokespersons version two (mean=1.41) and those who listened to male spokesperson version two (mean=.93). According to Duncan's multiple range test, there was a significant difference ($p<.05$) in responses to question four between subjects exposed to male spokesperson version two (mean=.04) and the following groups: subjects exposed to female spokesperson version one (mean=.23), male spokesperson version one (mean=.27), and female spokesperson version two (mean=.32).
Both MANOVAs also revealed a significant difference in responses question 2c (ability to control tartar) by sex of communicator(s), $F(2,321)=3.77$, $p=.02$. Examining the effect of sex of spokesperson(s) on question 2c using Duncan's test, there was a significant difference ($p<.05$) between subjects exposed to the female spokesperson (mean=1.31) and both the male spokesperson condition (mean=1.03) and the male and female spokespersons condition (mean=.92). Both MANOVAs also revealed a significant difference in responses to both question 1 (Ideal) and question 5a (anti-plaque abilities) by version of communicator(s), $F(1,321)=11.98$, $p=.001$ and $F(1,321)=3.8$, $p=.05$ respectively. Duncan's multiple range test revealed a significant difference ($p<.05$) in responses to question one between subjects exposed to the male and female communicator version two (mean=1.61) and the following groups: subjects exposed to male and female spokespersons version one (mean=1.87), subjects exposed to female spokesperson version one (mean=1.90), and subjects exposed to male spokesperson version one (mean=1.96). Duncan's procedure also revealed a significant difference ($p<.05$) in responses to question 5a between the male and female spokespersons version one (mean=.79) and both the male spokespersons version two (mean=.29) and male and female spokespersons version two (mean=.39).

The first MANOVA also revealed a significant main effect of sex of message recipient for responses to the following:
likelihood of trying brand, \( F(1,321)=6.30, p=.01 \), evaluation of spokesperson(s), \( F(1,321)=4.41, p=.04 \), evaluation of brand, \( F(1,321)=4.22, p=.04 \), and responses to question 1, \( F(1,321)=7.61, p=.006 \). ANOVA's were performed to examine the main effect of sex of message recipient more closely. Female subjects (mean=5.44) were significantly more likely to try brand than male subjects (mean=4.99), \( F(1,333)=6.54, p=.01 \). Female subjects (mean=4.98) also evaluated the spokesperson(s) more positively than the male subjects (mean=4.81), \( F(1,333)=4.89, p=.03 \). For evaluations of brand, female subjects (mean=5.34) had significantly more positive evaluations than male subjects (mean=5.15), \( F(1,333)=2.71, p=.04 \). Female subjects (mean=4.44) had significantly more positive evaluations of the radio ad than male subjects (mean=4.19), \( F(1,333)=4.14, p=.04 \). Finally, female subjects (mean=1.89) were more likely to respond to question 1 (Ideal) correctly than male subjects (mean=1.71), \( F(1,333)=8.18, p=.004 \). Where there was a significant difference in male and female subjects' responses to the dependent variables, the female subjects responded more positively.

In the second MANOVA there was a significant interaction between gender role type of message recipient and sex of communicator for responses to question 2a (ability to freshen breath), \( F(6,333)=2.34, p=.03 \), and question 2d (ability to reduce sensitivity), \( F(6,333)=2.15, p=.04 \). Duncan's procedure unexpectedly revealed that subjects with a masculine gender
role type and that were exposed to a female communicator made significantly more correct responses to question 2a (ability to freshen breath) than all the other subjects by gender role type sex of communicator (p<.05).

Unexpectedly, androgynous gender role typed subjects that were exposed to the male and female spokespersons condition (mean=.53) scored significantly (p<.05) lower on responses to question 2d (ability to reduce sensitivity) than the following groups: feminine gender role typed subjects exposed to a female spokesperson (mean=1.33) or male and female spokespersons (mean=1.44) and masculine gender role typed subjects exposed to a female spokesperson (mean=1.12) or male spokesperson (mean=1.21). Feminine gender role typed subjects that were exposed to a male spokesperson (mean=.70) scored significantly (p<.05) lower on responses to question 2d (ability to reduce sensitivity) than subjects with a feminine gender role who were exposed to a female spokesperson (mean=1.33) or male and female spokespersons (mean=1.44). Also, subjects with an undifferentiated gender role type exposed to a male spokesperson (mean=.84) scored significantly (p<.05) lower on responses to question 2d than subjects with feminine gender role types exposed to male and female spokespersons (mean=1.44).

The second MANOVA revealed a significant interaction between gender role type of message recipient and version of communicator(s), F(3,333)=3.93, p=.009. Duncan's procedure
revealed a significant (<.05) difference in self-reference scores between undifferentiated gender role typed subjects exposed to the male and female spokespersons version two (mean=4.50) than the following: androgynous gender typed subjects exposed to the male spokesperson version one (mean=5.73) or male and female spokespersons version two (mean=5.95) and masculine gender typed subjects exposed to the female spokesperson version two (mean=5.82).

Finally, the second MANOVA revealed a significant difference between gender role types for evaluations of spokesperson(s), $F(3,333)=10.66$, $p<.001$, evaluations of brand, $F(3,333)=3.53$, $p=.02$, and evaluations of radio ad, $F(3,333)=3.10$, $p=.03$. Specifically, Duncan's procedure revealed that feminine (mean=5.02) and androgynous (mean=5.18) gender typed subjects both gave significantly higher evaluations of the spokesperson(s) than masculine (mean=4.74) and undifferentiated (mean=4.61) gender role typed subjects did. Also, for brand evaluations feminine (mean=5.31) and androgynous (mean=5.42) gender role typed subjects gave more positive evaluations than undifferentiated gender typed subjects (mean=4.99). For evaluations of the radio ad, androgynous gender typed subjects (mean=4.57) gave more positive evaluations than undifferentiated subjects did (mean=4.02).

In addition to examining correlations between self-reference scores and the dependent variables,
intercorrelations among all the dependent variables were examined (see table 8) to see what relationships existed for the variables that were significantly correlated to self-referencing. Likelihood of buying brand was significantly correlated with spokesperson evaluation and brand evaluation \((p<.05)\), but only shared 2 percent common variance with spokesperson evaluation and 3 percent common variance with brand evaluation. However, likelihood of trying brand shared more common variance than likelihood of buying brand with spokesperson evaluation (18 percent common variance), brand evaluation (24 percent common variance), and radio ad evaluation (20 percent common variance)\((p<.01)\). One would expect likelihood of buying brand to correlate more strongly with the other dependent variables than likelihood of trying brand because buying the brand would presumably mean more attitude change occurred than merely trying the brand. More people would be willing to try a brand, if given to them, than go out and buy a brand. Evaluations of the radio ad shared 20 percent common variance with likelihood of trying, 53 percent common variance with spokesperson evaluation, and 32 percent common variance with brand evaluation.
Although subjects were hypothesized to self-reference more in conditions when their sex or gender role matched the communicator's, this prediction was not supported. Perhaps subjects did not attend to the sex of the communicator(s) and not realize the sex of the communicator(s). Although a direct manipulation check was not included in the present study, a post hoc investigation was conducted to determine if the sex of the communicator(s) could be correctly identified. A total of thirty people listened to one of the six radio ad messages, with five people listening to each radio ad. All thirty people correctly identified the sex(es) of the communicator(s). This finding casts doubt on the inability to identify the communicator's sex as an explanation for the failure to confirm the original hypothesis. However, it may be that the message recipients did not regard the communicators as stereotypically masculine or feminine. In this case, the source would not match the gender roles of these types of message recipients, thereby attenuating the expected self-referencing.

Alternatively, it is possible that people self-reference only in certain novel conditions. For example, Debevic and
Iyer (1988) found that subjects self-referenced more in conditions where the spokesperson was untraditional for the sex-typed product. For example, subjects as a whole self-referenced more in commercial situations that had a female spokesperson for beer (masculine product image) or male spokesperson for dishwashing liquid (feminine product image) than they did in commercial situations that had a traditional product and communicator pairing. It may be that for gender neutral products such as toothpaste, the sex of the spokesperson(s) does not become an influential factor in the self-reference process. Future researchers may want to examine under which conditions we self-reference more (e.g., sex-typed products versus neutral products) and explore whether men and women self-reference equally under different conditions (e.g., sex of subject matching or not matching that stereotyped for product). Using a gender-relevant product (e.g., pantyhose, tools) may make the spokesperson's gender a more influential factor in self-referencing.

Self-referencing was expected to positively correlate with evaluations of spokesperson(s), radio ad, and brand, intention to buy and try the brand, and recall of facts from the message. However, this effect was not found for evaluations of spokesperson and of brand and for intention to try the brand. As expected, subjects who self-referenced were more likely to intend to buy the brand. This is probably the most important response variable (next to actual purchasing
behavior) that advertisers are interested in. Also, those who self-referenced more were more likely to remember that the name of the plant in which the main effective ingredient is found (i.e., sanguinaria). Of the ten recall items, this item was the most difficult to answer correctly. Only 14.9% of subjects came close to answering correctly, and 3% were totally correct. What may be suggested is that those that self-referenced more were able to recall the most difficult item, possibly due to the deeper encoding that self-referencing is thought to produce.

Unexpectedly, self-referencing was negatively correlated with recall of the name of the brand in the radio ad (i.e., Ideal). This was the easiest item to recall with 90.1% receiving two points, .3% receiving one point, and 9.3% receiving no point. This is disturbing because even if subjects who self-reference are more willing to buy the brand, they may not be able to if they cannot remember the name of the brand. Recognition was not tested, so we do not know if subjects who did not recall the item, would or would not be able to recognize the brand name if they saw it.

The negative correlation between self-reference scores and recall of the name of the brand (easiest item to recall) and the positive correlation between self-reference scores and recall of "sanguinaria" (most difficult item to recall) can both be possibly explained by the type of processing self-referencing produces. Self-referencing is believed to process
incoming stimuli more deeply because the involvement with the self in processing makes the input full and rich due to the availability of an immense amount of previous information and experiences that the new stimulus information becomes attached to in the memory trace (Markus & Smith, 1981; Rogers, Kuiper, & Kirker, 1977). According to the elaborative processing principle of memory functioning (Anderson & Reder, 1979; Craik & Lockhart, 1972; Jacoby & Craik, 1979) accessibility of a memory is a function of the extent to which the information makes contact with preexisting memories during encoding. It appears that self-referencing may promote central processing rather than peripheral, and that these central and more complex pieces of information (e.g., sanguinaria) become more deeply encoded than shallower elements, such as the name of the brand. These findings contradict Petty and Cacioppo's (1981) elaboration likelihood theory and Chaiken's (1980, 1987) theory of systematic versus unsystematic processing. Both of these theories would suggest that familiarity would be a peripheral persuasion cue that would cause one to process peripheral aspects of the communication rather than central aspects. It appears from the present findings that self-referencing enhances central and not peripheral processing. Future research should examine this possibility by asking participants to engage in a thought listing procedure often used in experiments testing these theories. The recipient generated cognitive responses could
be content analyzed to help reveal whether self-referencing and central versus peripheral processing was occurring during the message.

It is unclear why those who self-referenced more would have less positive evaluations of the radio ad. It may be that those who self-referenced more were more critical of the quality of the radio ad since they may have processed it more deeply using the self-reference process. The radio ad was purported to be a copy test for a radio commercial, so it did not have the production quality to be released over the air; higher self-referencers may have picked up on this fact more than lower self-referencers.

The significant relationship between self-referencing and the two dependent variables, likelihood of buying brand and evaluations of radio ad, was also seen in the regression analyses, where the dependent variables were regressed onto both the independent variable and the mediator. The same types of effects were seen whether the independent variable was the interaction between sex of communicator(s) and message recipient's sex or the interaction between sex of communicator(s) and message recipient's gender role type.

Gender role type of the message recipient was expected to have a stronger relationship than sex of message recipient in interaction with sex of communicator because our self-prescribed gender role type reflects how we view ourselves and presumably this view of ourselves affects how we view and
process others. However, in the present analyses, sex and gender role type of message recipient accounted for about the same amount of variance in most of the dependent variables (see table 4 and table 7). It appears that gender role type is not a better predictor of these dependent variables than sex of message recipient.

Subjects were expected to recall more facts, be more likely to try and buy the brand, and have more positive evaluations of the brand, radio ad, and communicator(s) when the message recipient's sex or gender role type matched the sex of the message communicator than when they were unmatched. Both sets of regression analyses confirmed that matching the sex of communicator(s) with the gender role type or sex of the message recipient does not appear to influence the likelihood of buying the brand, recall of facts, nor does it appear to influence evaluations of communicator(s), radio ad, and brand. It appears that listening to a same sex communicator does not influence one's responses to these dependent variables.

In the MANOVAs and ANOVAs the version of communicator(s) interacted with sex of communicator(s) for evaluation of communicator(s) and responses to questions 3 (8 out of 10 dentists recommend) and 4 (sanguinaria plant). Which version of communicator(s) (e.g., female spokesperson version one, female spokesperson version two) subjects were exposed to interacted with gender type to influence responses. For example, subjects exposed to male spokesperson version two did
not have as many correct responses to question 4 (sanguinaria plant) than subjects exposed to male spokesperson version one. These results affirms the need to test the differences caused by different communicators even within the same conditions (i.e., female communicator condition, male communicator condition, etc.). Future research should employ detailed manipulation check questions to help reveal why variations due to particular communicators occur.

Many of the results from the MANOVA and follow-up analyses showed significant interactions, but many of them do not support any general trend in responses (e.g., a trend for better recall and more positive evaluations when subjects gender role type matches the sex of the communicators). For example, the fact that feminine gender role typed subjects who were exposed to a male communicator made significantly less correct responses to question 2d (reduces sensitivity) than subjects with a feminine gender role type exposed to a female communicator, does not allude to a trend in which subjects are responding to the dependent variables. Many of the relationships appeared to be spurious. The hypothesized matching effect between subjects' gender role type or sex and the communicator(s) sex was not supported across dependent variables.

The first MANOVA and consequent ANOVA examining the main effect of sex revealed an interesting result. Where there was a significant difference in male and female subjects'
responses to the dependent variables, the female subjects responded more positively. Female subjects were more likely to try the brand, responded more correctly to question 1 (Ideal), and evaluated the spokesperson(s), radio ad, and brand more positively. Similarly, results from the second MANOVA and consequent ANOVA revealed that feminine gender typed subjects evaluated the spokesperson(s) and brand more positively than masculine gender typed subjects. This contradicts Eagly's (1979) postulate that women are not more persuadable than men. It appears that biological sex and gender role concept may be good predictors of product use, product perception, and advertising recall.

It is unclear why subjects did not self-reference more in situations in which their gender role type or sex matched the sex of the communicator(s). It is also unclear why self-referencing was not a better predictor of more of the dependent variables. Future studies need to examine why self-referencing did not occur in the expected pattern in this study. It is possible that our gender schema is not an influential factor when we process using self-referencing in situations where the product is gender-neutral (i.e., toothpaste). Future studies should include both gender-neutral and gender-relevant products. This will allow examining the influences of product factors, sex of spokesperson(s), and sex and gender of message recipient together on self-referencing. In order to examine why self-
referencing did not occur as expected in the present study, future studies should monitor how subjects are perceiving the communicator, message, and product by asking subjects to record cognitive responses about the salience of the communicator's gender and gender image of product. As aforementioned, future research should ask participants to engage in thought listing procedures. These cognitive responses could be content analyzed to help reveal whether self-referencing was occurring during the message.

Many of the relationships that were expected were not found in the present study, possibly because of the aforementioned reasons. The present study was meant to be a testing ground. It would be interesting to replicate the relationships between sex of communicator(s), gender role type of message recipients, and sex of message recipients and their effects on self-referencing, and consequently on evaluations of spokesperson, radio ad, and brand, recall of information from ad, and intention to buy and try brand. However, these relationships should be tested in a more natural setting, such as the media market, with a more diverse and representative sample. Under more natural circumstances, more of the proposed relationships may have appeared. Advertisers spend billions of dollars in hopes of persuading targeted audiences to try specific brands or services. It would be interesting to see the relationship between the factors of this study in a more natural setting for both those interested in
information processing and advertising.
APPENDIX A

IDEAL TOOTHPASTE COMMERCIAL SCRIPT
APPENDIX A

Ideal Toothpaste Commercial Script

"What would you call a fluoride toothpaste that naturally, safely, freshens breath, and reliably whitens teeth?"
"Great!"

"How about a toothpaste that works to control calculus and tartar buildup along with an added bonus of relieving sensitivity to hot and cold?"
"Excellent!"

"Now what if I tell you that there is a toothpaste that freshens breath, whitens teeth, controls tartar, and reduces sensitivity in teeth all in one. What would you call that?"
"Wow!"

"Well, we thought of that, but to us a toothpaste that did all that, contained fluoride and was highly recommended by 8 out of 10 general dentists and periodontists was IDEAL. So that's what we called it, IDEAL."

"IDEAL toothpaste is a new total care toothpaste developed through extensive research resulting in naturally derived highly advanced formula. You see, the main effective ingredient is found in the sanguinaria plant whose natural anti-plaque, anti-tartar fighting abilities have been known for many years in Europe. This natural ingredient combined with safe and effective whitening agents brings the brightness back into your smile. IDEAL also gives you a fresh and natural minty flavor that no other toothpaste can compare to."
As if that weren't enough, Ideal toothpaste has an extra ability to reduce sensitivity in teeth."

"So, since most dentists agree that this is an ideal product, you can use it with confidence knowing that no other toothpaste is as ideal as IDEAL toothpaste."
APPENDIX B

MESSAGE RECIPIENT QUESTIONNAIRE FOR ONE COMMUNICATOR CONDITION
APPENDIX B

Message Recipient Questionnaire For One
Communicator Condition

STATEMENT OF CONSENT

In the following study you will be asked to participate in a copy test for a radio commercial. Participation will take approximately 30-45 minutes.

All the information you provide will be confidential and anonymous and you may discontinue participation at any time.

I understand the above and consent to participating in the study.

__________________________  ________________
Signature                     Date
1. Do you currently use a particular brand of toothpaste? (please circle) Yes or No

2. If you answered yes to question #1, what brand of toothpaste are you currently using?

In the following section, please circle the number on the scale that best fits your response.

Was the speaker:

- not credible 1 2 3 4 5 6 7 credible
- pleasant 1 2 3 4 5 6 7 unpleasant
- trustworthy 1 2 3 4 5 6 7 untrustworthy
- not an expert 1 2 3 4 5 6 7 an expert
- likable 1 2 3 4 5 6 7 unlikable
- ineffective 1 2 3 4 5 6 7 effective
- unfriendly 1 2 3 4 5 6 7 friendly
- informative 1 2 3 4 5 6 7 not informative
- insincere 1 2 3 4 5 6 7 sincere
- not entertaining 1 2 3 4 5 6 7 entertaining
- not interesting 1 2 3 4 5 6 7 interesting
- appealing 1 2 3 4 5 6 7 unappealing
- convincing 1 2 3 4 5 6 7 not convincing
- original 1 2 3 4 5 6 7 unoriginal

Would you be...

- likely to buy brand 1 2 3 4 5 6 7 unlikely to buy brand
- unlikely to try brand 1 2 3 4 5 6 7 likely to try brand
Is the brand...

   | good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | bad
---|-----|---|---|---|---|---|---|--
   | lacking quality | 1 | 2 | 3 | 4 | 5 | 6 | 7 | quality
   | useless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | useful
   | harmless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | harmful
   | appealing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | unappealing

Is the radio advertisement...

   | unimpressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | impressive
---|---------------|---|---|---|---|---|---|--
   | believable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | unbelievable
   | unappealing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | appealing
   | not convincing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | convincing
   | effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | ineffective

In relation to the spokesperson are you...

   | able to see yourself | 1 | 2 | 3 | 4 | 5 | 6 | 7 | unable to see yourself
---|----------------------|---|---|---|---|---|---|--|----------------------
   | in the ad setting    |    |    |    |    |    |    |    | in the ad setting    
   | able to see yourself | 1 | 2 | 3 | 4 | 5 | 6 | 7 | unable to see yourself
   | in the position of   |    |    |    |    |    |    |    | unable to see yourself
   | the spokesperson     |    |    |    |    |    |    |    | in the position of the spokesperson 
   | similar in life      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | dissimilar in life
   | experiences          |    |    |    |    |    |    |    | experiences          
   | similar to speaker   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | dissimilar to speaker

Please answer the following questions concerning the radio commercial you just heard.

1. What was the name of the brand in this radio ad?

2. What are all the abilities this particular brand has to offer to its users?
3. This product was highly recommended by ____ out of ____ general dentists and periodontists.

4. In what plant is the main effective ingredient of this brand found?

5. What natural abilities does this main ingredient have?

6. Where has this main ingredient been used for many years?
DIRECTIONS

Below you will find listed a number of personality characteristics. We would like you to use those characteristics to describe yourself, that is, we would like you to indicate, on a scale from 1 to 7, how true of you each of these characteristics is. Please do not leave any characteristic unmarked.

<table>
<thead>
<tr>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
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<th>7</th>
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</thead>
<tbody>
<tr>
<td>Never or almost never true</td>
<td>Usually not true</td>
<td>Sometimes but infrequently true</td>
<td>Occasionally true</td>
<td>Often true</td>
<td>Usually true</td>
<td>Always or almost always true</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Defend my own beliefs</th>
<th>Adaptable</th>
<th>Flatterable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affectionate</td>
<td>Dominant</td>
<td>Theatrical</td>
</tr>
<tr>
<td>Conscientious</td>
<td>Tender</td>
<td>Self-sufficient</td>
</tr>
<tr>
<td>Independent</td>
<td>Conceited</td>
<td>Loyal</td>
</tr>
<tr>
<td>Sympathetic</td>
<td>Willing to take a stand</td>
<td>Happy</td>
</tr>
<tr>
<td>Moody</td>
<td>Love children</td>
<td>Individualistic</td>
</tr>
<tr>
<td>Assertive</td>
<td>Tactful</td>
<td>Soft-spoken</td>
</tr>
<tr>
<td>Sensitive to needs of others</td>
<td>Aggressive</td>
<td>Gullible</td>
</tr>
<tr>
<td>Reliable</td>
<td>Gentle</td>
<td>Masculine</td>
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<tr>
<td>Strong personality</td>
<td>Conventional</td>
<td>Solemn</td>
</tr>
<tr>
<td>Understanding</td>
<td>Self-reliant</td>
<td>Competitive</td>
</tr>
<tr>
<td>Jealous</td>
<td>Yielding</td>
<td>Childlike</td>
</tr>
<tr>
<td>Forceful</td>
<td>Helpful</td>
<td>Likable</td>
</tr>
<tr>
<td>Compassionate</td>
<td>Athletic</td>
<td>Ambitious</td>
</tr>
<tr>
<td>Truthful</td>
<td>Cheerful</td>
<td>Do not use harsh language</td>
</tr>
<tr>
<td>Have leadership abilities</td>
<td>Unsystematic</td>
<td>Sincere</td>
</tr>
<tr>
<td>Eager to soothe hurt feelings</td>
<td>Analytical</td>
<td>Act as a leader</td>
</tr>
<tr>
<td>Secretive</td>
<td>Shy</td>
<td>Feminine</td>
</tr>
<tr>
<td>Willing to take risks</td>
<td>Inefficient</td>
<td>Friendly</td>
</tr>
<tr>
<td>Warm</td>
<td>Make decisions easily</td>
<td></td>
</tr>
</tbody>
</table>
Please supply the following information:

1. Age________

2. Sex (please circle)  Male  Female
DEBRIEFING FORM

You have just participated in an experiment that is examining the effect of spokesperson's sex and message recipient's sex on self-reference, purchase intention, and the recall and evaluation of communicator, message, and product. In other words, we are examining whether the spokesperson's sex and whether you are male or female affects the following: your viewed similarity with the spokesperson, your intent to purchase the product, your recall of the ad, and your evaluation of the spokesperson, message, and product.

The type of spokesperson used in an advertisement has been shown to have an effect on heightening consumer awareness and recall of a brand or product (Frieden, 1984; Kamen, Azhari, & Kragh, 1975). Whipple and Courtney (1985) and Debevic and Iyer (1986) both found that spokesperson's gender alters the gender image of brands, and both studies provide evidence that each gender prefers brands with same-sex images. We expect to find similar results.

IDEAL toothpaste is a fictitious toothpaste that was created for this experiment and will never be marketed.

Thank you for your time and cooperation!
APPENDIX C

MESSAGE RECIPIENT QUESTIONNAIRE FOR TWO COMMUNICATORS CONDITION
APPENDIX C

Message Recipient Questionnaire For Two Communicators Condition

STATEMENT OF CONSENT

In the following study you will be asked to participate in a copy test for a radio commercial. Participation will take approximately 30-45 minutes.

All the information you provide will be confidential and anonymous and you may discontinue participation at any time.

I understand the above and consent to participating in the study.

_________________________  ______________
Signature                     Date
1. Do you currently use a particular brand of toothpaste? (please circle) Yes or No

2. If you answered yes to question #1, what brand of toothpaste are you currently using?

In the following section, please circle the number on the scale that best fits your response.

Was the female speaker:
- not credible 1 2 3 4 5 6 7 credible
- pleasant 1 2 3 4 5 6 7 unpleasant
- trustworthy 1 2 3 4 5 6 7 untrustworthy
- not an expert 1 2 3 4 5 6 7 an expert
- likable 1 2 3 4 5 6 7 unlikable
- ineffective 1 2 3 4 5 6 7 effective
- unfriendly 1 2 3 4 5 6 7 friendly
- informative 1 2 3 4 5 6 7 not informative
- insincere 1 2 3 4 5 6 7 sincere
- not entertaining 1 2 3 4 5 6 7 entertaining
- not interesting 1 2 3 4 5 6 7 interesting
- appealing 1 2 3 4 5 6 7 unappealing
- convincing 1 2 3 4 5 6 7 not convincing
- original 1 2 3 4 5 6 7 unoriginal

Was the male speaker:
- not credible 1 2 3 4 5 6 7 credible
- pleasant 1 2 3 4 5 6 7 unpleasant
- trustworthy 1 2 3 4 5 6 7 untrustworthy
- not an expert 1 2 3 4 5 6 7 an expert
- likable 1 2 3 4 5 6 7 unlikable
Was the male speaker:

ineffective 1 2 3 4 5 6 7 effective
unfriendly 1 2 3 4 5 6 7 friendly
informative 1 2 3 4 5 6 7 not informative
insincere 1 2 3 4 5 6 7 sincere
not entertaining 1 2 3 4 5 6 7 entertaining
not interesting 1 2 3 4 5 6 7 interesting
appealing 1 2 3 4 5 6 7 unappealing
convincing 1 2 3 4 5 6 7 not convincing
original 1 2 3 4 5 6 7 unoriginal

Would you be...

likely to buy brand 1 2 3 4 5 6 7 unlikely to buy brand
unlikely to try brand 1 2 3 4 5 6 7 likely to try brand

Is the brand...

good 1 2 3 4 5 6 7 bad
lacking quality 1 2 3 4 5 6 7 quality
useless 1 2 3 4 5 6 7 useful
harmless 1 2 3 4 5 6 7 harmful
appealing 1 2 3 4 5 6 7 unappealing

Is the radio advertisement...

unimpressive 1 2 3 4 5 6 7 impressive
believable 1 2 3 4 5 6 7 unbelievable
unappealing 1 2 3 4 5 6 7 appealing
not convincing 1 2 3 4 5 6 7 convincing
effective 1 2 3 4 5 6 7 ineffective
In relation to the female spokesperson are you...

able to see yourself in the ad setting 1 2 3 4 5 6 7 unable to see yourself in the ad setting 1 2 3 4 5 6 7

able to see yourself in the position of the spokesperson 1 2 3 4 5 6 7 unable to see yourself in the position of the spokesperson 1 2 3 4 5 6 7

similar in life experiences 1 2 3 4 5 6 7 dissimilar in life experiences 1 2 3 4 5 6 7

similar to speaker 1 2 3 4 5 6 7 dissimilar to speaker 1 2 3 4 5 6 7

In relation to the male spokesperson are you...

able to see yourself in the ad setting 1 2 3 4 5 6 7 unable to see yourself in the ad setting 1 2 3 4 5 6 7

able to see yourself in the position of the spokesperson 1 2 3 4 5 6 7 unable to see yourself in the position of the spokesperson 1 2 3 4 5 6 7

similar in life experiences 1 2 3 4 5 6 7 dissimilar in life experiences 1 2 3 4 5 6 7

similar to speaker 1 2 3 4 5 6 7 dissimilar to speaker 1 2 3 4 5 6 7

Please answer the following questions concerning the radio commercial you just heard.

1. What was the name of the brand in this radio ad? ____________

2. What are all the abilities this particular brand has to offer to its users? ____________________________________________

3. This product was highly recommended by ___ out of ___ general dentists and periodontists.

4. In what plant is the main effective ingredient of this brand found? ___________________________
5. What natural abilities does this main ingredient have?

6. Where has this main ingredient been used for many years?
**DIRECTIONS**

Below you will find listed a number of personality characteristics. We would like you to use those characteristics to describe yourself, that is, we would like you to indicate, on a scale from 1 to 7, how true of you each of these characteristics is. Please do not leave any characteristic unmarked.

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<td>Have leadership abilities</td>
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<td>Make decisions easily</td>
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<td>Secretive</td>
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<td>Make decisions easily</td>
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<td>Flatterable</td>
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<td>Solemn</td>
<td>Competitive</td>
<td>Childlike</td>
<td>Likable</td>
<td>Ambitious</td>
</tr>
<tr>
<td>Gullible</td>
<td>Solemn</td>
<td>Competitive</td>
<td>Childlike</td>
<td>Likable</td>
<td>Ambitious</td>
<td>Do not use harsh language</td>
</tr>
<tr>
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<td>Likable</td>
<td>Ambitious</td>
<td>Do not use harsh language</td>
<td>Sincere</td>
</tr>
<tr>
<td>Competitive</td>
<td>Childlike</td>
<td>Likable</td>
<td>Ambitious</td>
<td>Do not use harsh language</td>
<td>Sincere</td>
<td>Act as a leader</td>
</tr>
<tr>
<td>Childlike</td>
<td>Likable</td>
<td>Ambitious</td>
<td>Do not use harsh language</td>
<td>Sincere</td>
<td>Act as a leader</td>
<td>Feminine</td>
</tr>
<tr>
<td>Likable</td>
<td>Ambitious</td>
<td>Do not use harsh language</td>
<td>Sincere</td>
<td>Act as a leader</td>
<td>Feminine</td>
<td>Friendly</td>
</tr>
<tr>
<td>Ambitious</td>
<td>Do not use harsh language</td>
<td>Sincere</td>
<td>Act as a leader</td>
<td>Feminine</td>
<td>Friendly</td>
<td></td>
</tr>
</tbody>
</table>
Please supply the following information:

1. Age___________

2. Sex (please circle)  Male    Female
DEBRIEFING FORM

You have just participated in an experiment that is examining the effect of spokesperson's sex and message recipient's sex on self-reference, purchase intention, and the recall and evaluation of communicator, message, and product. In other words, we are examining whether the spokesperson's sex and whether you are male or female affects the following: your viewed similarity with the spokesperson, your intent to purchase the product, your recall of the ad, and your evaluation of the spokesperson, message, and product.

The type of spokesperson used in an advertisement has been shown to have an effect on heightening consumer awareness and recall of a brand or product (Frieden, 1984; Kamen, Azhari, & Kragh, 1975). Whipple and Courtney (1985) and Debevic and Iyer (1986) both found that spokesperson's gender alters the gender image of brands, and both studies provide evidence that each gender prefers brands with same-sex images. We expect to find similar results.

IDEAL toothpaste is a fictitious toothpaste that was created for this experiment and will never be marketed.

Thank you for your time and cooperation!
APPENDIX D

MESSAGE RECIPIENT QUESTIONNAIRE FOR TWO
COMMUNICATORS CONDITION
APPENDIX D

Message Recipient Questionnaire For Two Communicators Condition

STATEMENT OF CONSENT

In the following study you will be asked to participate in a copy test for a radio commercial. Participation will take approximately 30-45 minutes.

All the information you provide will be confidential and anonymous and you may discontinue participation at any time.

I understand the above and consent to participating in the study.

_______________________________  ____________________
Signature                        Date
1. Do you currently use a particular brand of toothpaste?  (please circle)  Yes or  No

2. If you answered yes to question #1, what brand of toothpaste are you currently using?  __________________________________________________________________________________

In the following section, please circle the number on the scale that best fits your response.

Was the male speaker:

not credible 1 2 3 4 5 6 7 credible
pleasant 1 2 3 4 5 6 7 unpleasant
trustworthy 1 2 3 4 5 6 7 untrustworthy
not an expert 1 2 3 4 5 6 7 an expert
likable 1 2 3 4 5 6 7 unlikable
ineffective 1 2 3 4 5 6 7 effective
unfriendly 1 2 3 4 5 6 7 friendly
informative 1 2 3 4 5 6 7 not informative
insincere 1 2 3 4 5 6 7 sincere
not entertaining 1 2 3 4 5 6 7 entertaining
not interesting 1 2 3 4 5 6 7 interesting
appealing 1 2 3 4 5 6 7 unappealing
convincing 1 2 3 4 5 6 7 not convincing
original 1 2 3 4 5 6 7 unoriginal

Was the female speaker:

not credible 1 2 3 4 5 6 7 credible
pleasant 1 2 3 4 5 6 7 unpleasant
trustworthy 1 2 3 4 5 6 7 untrustworthy
not an expert 1 2 3 4 5 6 7 an expert
likable 1 2 3 4 5 6 7 unlikable
Was the female speaker:

ineffective 1 2 3 4 5 6 7 effective
unfriendly 1 2 3 4 5 6 7 friendly
informative 1 2 3 4 5 6 7 not informative
insincere 1 2 3 4 5 6 7 sincere
not entertaining 1 2 3 4 5 6 7 entertaining
not interesting 1 2 3 4 5 6 7 interesting
appealing 1 2 3 4 5 6 7 unappealing
convincing 1 2 3 4 5 6 7 not convincing
original 1 2 3 4 5 6 7 unoriginal

Would you be...

likely to buy brand 1 2 3 4 5 6 7 unlikely to buy brand
unlikely to try brand 1 2 3 4 5 6 7 likely to try brand

Is the brand...

good 1 2 3 4 5 6 7 bad
lacking quality 1 2 3 4 5 6 7 quality
useless 1 2 3 4 5 6 7 useful
harmless 1 2 3 4 5 6 7 harmful
appealing 1 2 3 4 5 6 7 unappealing

Is the radio advertisement...

unimpressive 1 2 3 4 5 6 7 impressive
believable 1 2 3 4 5 6 7 unbelievable
unappealing 1 2 3 4 5 6 7 appealing
not convincing 1 2 3 4 5 6 7 convincing
effective 1 2 3 4 5 6 7 ineffective
In relation to the male spokesperson are you...

able to see yourself in the ad setting 1 2 3 4 5 6 7

able to see yourself in the position of the spokesperson 1 2 3 4 5 6 7

similar in life experiences 1 2 3 4 5 6 7

dissimilar in life experiences

similar to speaker 1 2 3 4 5 6 7

dissimilar to speaker

In relation to the female spokesperson are you...

able to see yourself in the ad setting 1 2 3 4 5 6 7

able to see yourself in the position of the spokesperson 1 2 3 4 5 6 7

similar in life experiences 1 2 3 4 5 6 7

dissimilar in life experiences

similar to speaker 1 2 3 4 5 6 7

dissimilar to speaker

Please answer the following questions concerning the radio commercial you just heard.

1. What was the name of the brand in this radio ad? 

2. What are all the abilities this particular brand has to offer to its users?

3. This product was highly recommended by ___ out of ___ general dentists and periodontists.

4. In what plant is the main effective ingredient of this brand found?
5. What natural abilities does this main ingredient have?

6. Where has this main ingredient been used for many years?
**DIRECTIONS**

Below you will find listed a number of personality characteristics. We would like you to use those characteristics to describe yourself, that is, we would like you to indicate, on a scale from 1 to 7, how true of you each of these characteristics is. Please do not leave any characteristic unmarked.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never or almost never true</td>
<td>Usually not true</td>
<td>Sometimes but infrequently true</td>
<td>Occasionally true</td>
<td>Often true</td>
<td>Usually true</td>
<td>Always or almost always true</td>
</tr>
</tbody>
</table>

- Defend my own beliefs
- Affectionate
- Conscientious
- Independent
- Sympathetic
- Moody
- Assertive
- Sensitive to needs of others
- Reliable
- Strong personality
- Understanding
- Jealous
- Forceful
- Compassionate
- Truthful
- Have leadership abilities
- Eager to soothe hurt feelings
- Secretive
- Willing to take risks
- Warm

- Adaptable
- Dominant
- Tender
- Conceited
- Willing to take a stand
- Love children
- Tactful
- Aggressive
- Gentle
- Conventional
- Self-reliant
- Yielding
- Helpful
- Athletic
- Cheerful
- Unsystematic
- Analytical
- Shy
- Inefficient
- Make decisions easily

- Flatterable
- Theatrical
- Self-sufficient
- Loyal
- Happy
- Individualistic
- Soft-spoken
- Unpredictable
- Masculine
- Gullible
- Solemn
- Competitive
- Childlike
- Likable
- Ambitious
- Do not use harsh language
- Sincere
- Act as a leader
- Feminine
- Friendly
Please supply the following information:

1. Age___________

2. Sex (please circle)  Male  Female
DEBRIEFING FORM

You have just participated in an experiment that is examining the effect of spokesperson's sex and message recipient's sex on self-reference, purchase intention, and the recall and evaluation of communicator, message, and product. In other words, we are examining whether the spokesperson's sex and whether you are male or female affects the following: your viewed similarity with the spokesperson, your intent to purchase the product, your recall of the ad, and your evaluation of the spokesperson, message, and product.

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Thank you for your time and cooperation!
APPENDIX E

RESPONSES TO QUESTIONNAIRE RECALL ITEMS
Appendix E

Responses To Questionnaire Recall Items

Question 1.  Ideal

Question 2a. Freshens breath
Question 2b. Whitens teeth
Question 2c. Controls tartar
Question 2d. Reduces sensitivity

Question 3.  8 out of 10

Question 4.  Sanguinaria

Question 5a. Anti-plaque abilities
Question 5b. Anti-tartar abilities

Question 6.  Europe
Table 1.-- Distribution of Subjects by BSRI Scores

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Masculine</th>
<th>Feminine</th>
<th>Androgynous</th>
<th>Undifferentiated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>149</td>
<td>44%</td>
<td>13%</td>
<td>21%</td>
<td>21%</td>
</tr>
<tr>
<td>Females</td>
<td>186</td>
<td>13%</td>
<td>32%</td>
<td>34%</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>335</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2.-- Means of Self-reference Scores by Sex of Communicator(s) and Sex of Message Recipient

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Effect of Sex of Message Recipient</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>185</td>
<td>5.37</td>
</tr>
<tr>
<td>Male</td>
<td>148</td>
<td>5.36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>333</td>
<td></td>
</tr>
</tbody>
</table>

| **Main Effect of Sex of Communicator(s)** |     |      |
| Female                  | 107 | 5.37 |
| Male                    | 124 | 5.44 |
| **Both Male and Female** | 102 | 5.28 |
| **Total**               | 333 |      |

| **Sex of Communicator by Sex of Message Recipient** |     |      |
| Male Communicator by Male Message Recipient       | 51  | 5.40 |
| Male Communicator by Female Message Recipient     | 73  | 5.46 |
| Female Communicator by Male Message Recipient     | 58  | 5.31 |
| Female Communicator by Female Message Recipient   | 49  | 5.44 |
| Both Male and Female Communicator by Male Message Recipient | 54  | 5.31 |
| Both Male and Female Communicator by Female Message Recipient | 48  | 5.25 |
| **Total**                                         | 333 |      |
Table 3.-- ANOVA Summary Table of Self-reference Scores by Sex of Communicator(s), Sex of Message Recipient, and Version of Communicator(s)

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of Message Recipient</td>
<td>.00</td>
<td>1</td>
<td>.00</td>
<td>.00</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex of Communicator(s)</td>
<td>1.26</td>
<td>2</td>
<td>.63</td>
<td>.93</td>
<td>n.s.</td>
</tr>
<tr>
<td>Version of Communicator(s)</td>
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<td>1</td>
<td>.15</td>
<td>.23</td>
<td>n.s.</td>
</tr>
<tr>
<td><strong>Two-way Interactions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of Message Recipient by Sex of Communicator(s)</td>
<td>.67</td>
<td>2</td>
<td>.33</td>
<td>.49</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex of Message Recipient by Version of Communicator(s)</td>
<td>.35</td>
<td>1</td>
<td>.35</td>
<td>.51</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex of Communicator(s) by Version of Communicator(s)</td>
<td>2.11</td>
<td>2</td>
<td>1.06</td>
<td>1.56</td>
<td>n.s.</td>
</tr>
<tr>
<td><strong>Three-way Interaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of Message Recipient by Sex of Communicator(s) by Version of Communicator(s)</td>
<td>1.71</td>
<td>2</td>
<td>.85</td>
<td>1.26</td>
<td>n.s.</td>
</tr>
<tr>
<td><strong>Explained</strong></td>
<td>6.29</td>
<td>11</td>
<td>.57</td>
<td>.84</td>
<td>n.s.</td>
</tr>
<tr>
<td><strong>Residual</strong></td>
<td>217.75</td>
<td>321</td>
<td>.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>224.04</td>
<td>332</td>
<td>.68</td>
<td></td>
<td></td>
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</tbody>
</table>
Table 4.-- Regression Analyses Examining the Mediational Effect of Self-referencing Between the Independent Variable (Interaction of Sex of Communicator and Message Recipient) and the Dependent Variable

<table>
<thead>
<tr>
<th>Regression Equation</th>
<th>Correlation Coefficient</th>
<th>DF</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regression 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Self-reference Scores onto Independent Variable</td>
<td>-.06</td>
<td>1,229</td>
<td>.98</td>
<td>n.s.</td>
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<tr>
<td><strong>Regression 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>onto Independent Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spokesperson Evaluation</td>
<td>.06</td>
<td>1,229</td>
<td>.80</td>
<td>n.s.</td>
</tr>
<tr>
<td>Brand Evaluation</td>
<td>-.01</td>
<td>1,229</td>
<td>.02</td>
<td>n.s.</td>
</tr>
<tr>
<td>Radio Ad Evaluation</td>
<td>.03</td>
<td>1,229</td>
<td>.16</td>
<td>n.s.</td>
</tr>
<tr>
<td>Likelihood of Trying Brand</td>
<td>-.006</td>
<td>1,229</td>
<td>.008</td>
<td>n.s.</td>
</tr>
<tr>
<td>Likelihood of Buying Brand</td>
<td>.02</td>
<td>1,229</td>
<td>.13</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall of Question 1</td>
<td>.05</td>
<td>1,229</td>
<td>.54</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall of Question 2a</td>
<td>.06</td>
<td>1,229</td>
<td>.72</td>
<td>n.s.</td>
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<tr>
<td>Recall of Question 2b</td>
<td>-.04</td>
<td>1,229</td>
<td>.36</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall of Question 2c</td>
<td>.05</td>
<td>1,229</td>
<td>.54</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall of Question 2d</td>
<td>.08</td>
<td>1,229</td>
<td>1.39</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall of Question 3</td>
<td>.08</td>
<td>1,229</td>
<td>1.67</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall of Question 4</td>
<td>-.03</td>
<td>1,229</td>
<td>.20</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall of Question 5a</td>
<td>.02</td>
<td>1,229</td>
<td>.10</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall of Question 5b</td>
<td>.05</td>
<td>1,229</td>
<td>.58</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall of Question 6</td>
<td>.02</td>
<td>1,229</td>
<td>.11</td>
<td>n.s.</td>
</tr>
<tr>
<td><strong>Regression 3</strong></td>
<td></td>
<td></td>
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<tr>
<td>onto Both Independent Variable (I) and Mediator (M)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Spokesperson Evaluation</td>
<td>.06 (I)</td>
<td>.10 (M)</td>
<td>2,228</td>
<td>1.41</td>
</tr>
<tr>
<td>Brand Evaluation</td>
<td>-.01 (I)</td>
<td>-.10 (M)</td>
<td>2,228</td>
<td>1.13</td>
</tr>
<tr>
<td>Radio Ad Evaluation</td>
<td>.02 (I)</td>
<td>-.26 (M)</td>
<td>2,228</td>
<td>8.61</td>
</tr>
<tr>
<td>Likelihood of Trying Brand</td>
<td>-.0006 (I)</td>
<td>-.03 (M)</td>
<td>2,228</td>
<td>.11</td>
</tr>
<tr>
<td>Likelihood of Buying Brand</td>
<td>.02 (I)</td>
<td>.21 (M)</td>
<td>2,228</td>
<td>5.28</td>
</tr>
<tr>
<td>Recall of Question 1</td>
<td>.05 (I)</td>
<td>-.11 (M)</td>
<td>2,228</td>
<td>1.54</td>
</tr>
<tr>
<td>Recall of Question 2a</td>
<td>.06 (I)</td>
<td>.02 (M)</td>
<td>2,228</td>
<td>.44</td>
</tr>
<tr>
<td>Recall of Question 2b</td>
<td>-.04 (I)</td>
<td>.03 (M)</td>
<td>2,228</td>
<td>.27</td>
</tr>
<tr>
<td>Recall of Question 2c</td>
<td>.05 (I)</td>
<td>.03 (M)</td>
<td>2,228</td>
<td>.41</td>
</tr>
<tr>
<td>Recall of Question 2d</td>
<td>.08 (I)</td>
<td>-.02 (M)</td>
<td>2,228</td>
<td>.71</td>
</tr>
<tr>
<td>Recall of Question 3</td>
<td>-.08 (I)</td>
<td>.02 (M)</td>
<td>2,228</td>
<td>.86</td>
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<tr>
<td>Recall of Question 4</td>
<td>-.03 (I)</td>
<td>.12 (M)</td>
<td>2,228</td>
<td>1.84</td>
</tr>
<tr>
<td>Recall of Question 5a</td>
<td>.02 (I)</td>
<td>-.01 (M)</td>
<td>2,228</td>
<td>.07</td>
</tr>
<tr>
<td>Recall of Question 5b</td>
<td>.05 (I)</td>
<td>.06 (M)</td>
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<td>.69</td>
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<tr>
<td>Recall of Question 6</td>
<td>.02 (I)</td>
<td>-.006 (M)</td>
<td>2,228</td>
<td>.06</td>
</tr>
</tbody>
</table>

(I) Independent variable is the interaction of sex of communicator and message recipient

(M) Mediator is self-referencing
Table 5: Means of Self-reference Scores by Sex of Communicator(s) and Gender Role Type of Message Recipient

<table>
<thead>
<tr>
<th>Gender Role Type</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feminine</td>
<td>79</td>
<td>5.31</td>
</tr>
<tr>
<td>Masculine</td>
<td>89</td>
<td>5.49</td>
</tr>
<tr>
<td>Androgynous</td>
<td>96</td>
<td>5.42</td>
</tr>
<tr>
<td>Undifferentiated</td>
<td>69</td>
<td>5.20</td>
</tr>
<tr>
<td>Total</td>
<td>333</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex of Communicator(s)</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>107</td>
<td>5.37</td>
</tr>
<tr>
<td>Male</td>
<td>124</td>
<td>5.44</td>
</tr>
<tr>
<td>Both Male and Female</td>
<td>102</td>
<td>5.28</td>
</tr>
<tr>
<td>Total</td>
<td>333</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summary of Gender Role Type by Sex of Message Recipient</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male Communicator by Masculine Gender Role Type</td>
<td>35</td>
<td>5.52</td>
</tr>
<tr>
<td>Male Communicator by Feminine Gender Role Type</td>
<td>27</td>
<td>5.40</td>
</tr>
<tr>
<td>Male Communicator by Androgynous Gender Role Type</td>
<td>31</td>
<td>5.42</td>
</tr>
<tr>
<td>Male Communicator by Undifferentiated Gender Role Type</td>
<td>31</td>
<td>5.39</td>
</tr>
<tr>
<td>Female Communicator by Masculine Gender Role Type</td>
<td>26</td>
<td>5.62</td>
</tr>
<tr>
<td>Female Communicator by Feminine Gender Role Type</td>
<td>27</td>
<td>5.23</td>
</tr>
<tr>
<td>Female Communicator by Androgynous Gender Role Type</td>
<td>34</td>
<td>5.34</td>
</tr>
<tr>
<td>Female Communicator by Undifferentiated Gender Role Type</td>
<td>20</td>
<td>5.29</td>
</tr>
<tr>
<td>Both Male and Female Communicator by Masculine Gender Role Type</td>
<td>28</td>
<td>5.33</td>
</tr>
<tr>
<td>Both Male and Female Communicator by Feminine Gender Role Type</td>
<td>25</td>
<td>5.30</td>
</tr>
<tr>
<td>Both Male and Female Communicator by Androgynous Gender Role Type</td>
<td>31</td>
<td>5.52</td>
</tr>
<tr>
<td>Both Male and Female Communicator by Undifferentiated Gender Role Type</td>
<td>18</td>
<td>4.77</td>
</tr>
<tr>
<td>Total</td>
<td>333</td>
<td></td>
</tr>
</tbody>
</table>
Table 6.-- ANOVA Summary Table of Self-reference Scores by Sex of Communicator(s), Gender Role Type of Message Recipient, and Version of Communicator(s)

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender Role Type of Message Recipient</td>
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<td>1.42</td>
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<td>.74</td>
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<td>.29</td>
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<td><strong>Two-way Interactions</strong></td>
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<td>6</td>
<td>.94</td>
<td>1.45</td>
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<td>Gender Role Type of Message Recipient by Version of Communicator(s)</td>
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<td>2.60</td>
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<td>Sex of Communicator(s) by Version of Communicator(s)</td>
<td>1.24</td>
<td>2</td>
<td>2.62</td>
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<td>n.s.</td>
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<td><strong>Total</strong></td>
<td>224.04</td>
<td>32</td>
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Table 7.-- Regression Analyses Examining the Mediational Effect of Self-referencing Between the Independent Variable (Interaction of Sex of Communicator and Gender Type of Message Recipient) and the Dependent Variable

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<tr>
<th>Regression Equation</th>
<th>Correlation Coefficient</th>
<th>DF</th>
<th>F</th>
<th>Significance of F</th>
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<td>Self-reference Scores onto Independent Variable</td>
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<td>.14</td>
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<td>Regression 2 - Regressing Dependent Variables onto Independent Variable</td>
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<td>Spokesperson Evaluation</td>
<td>-.008</td>
<td>1,262</td>
<td>.02</td>
<td>n.s.</td>
</tr>
<tr>
<td>Brand Evaluation</td>
<td>.02</td>
<td>1,262</td>
<td>.11</td>
<td>n.s.</td>
</tr>
<tr>
<td>Radio Ad Evaluation</td>
<td>.03</td>
<td>1,262</td>
<td>.30</td>
<td>n.s.</td>
</tr>
<tr>
<td>Likelihood Of Trying Brand</td>
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<td>1,262</td>
<td>.27</td>
<td>n.s.</td>
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<tr>
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<td>-.02</td>
<td>1,262</td>
<td>.06</td>
<td>n.s.</td>
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<td>1,262</td>
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<td>n.s.</td>
</tr>
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<td>n.s.</td>
</tr>
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<td>.26</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall Of Question 2d</td>
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<td>1.03</td>
<td>n.s.</td>
</tr>
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<td>Recall Of Question 4</td>
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<td>.81</td>
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<td>.36</td>
<td>n.s.</td>
</tr>
<tr>
<td>Recall Of Question 5b</td>
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<td>.64</td>
<td>n.s.</td>
</tr>
<tr>
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<td>.002</td>
<td>n.s.</td>
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<td>Regression 3 - Regressing Dependent Variables onto Both Independent Variable (I) and Mediator (M)</td>
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<td>Spokesperson Evaluation</td>
<td>-.008 (I)</td>
<td>-.11 (M)</td>
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</tr>
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<td>Brand Evaluation</td>
<td>.02 (I)</td>
<td>.10 (M)</td>
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<td>1.25</td>
</tr>
<tr>
<td>Radio Ad Evaluation</td>
<td>.03 (I)</td>
<td>.25 (M)</td>
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<td>8.67</td>
</tr>
<tr>
<td>Likelihood Of Try Brand</td>
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<td>-.09 (M)</td>
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</tr>
<tr>
<td>Likelihood Of Buy Brand</td>
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</tr>
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<td>-.19 (M)</td>
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<td>.04 (M)</td>
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</tr>
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<tr>
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<td>-.06 (M)</td>
<td>2,261</td>
<td>.54</td>
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(I) Independent variable is the interaction of sex of communicator and message recipient

(M) Mediator is self-referencing
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<tr>
<th></th>
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<th>Likelihood of Buying Brand</th>
<th>Spokesperson Evaluation</th>
<th>Brand Evaluation</th>
<th>Radio Ad Evaluation</th>
<th>Recall of Question 1</th>
<th>Recall of Question 2a</th>
<th>Recall of Question 2b</th>
<th>Recall of Question 2c</th>
<th>Recall of Question 2d</th>
<th>Recall of Question 3</th>
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<td>.45**</td>
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<td>.10</td>
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<td>.09</td>
<td>.001</td>
<td>.05</td>
<td>.13*</td>
<td>.03</td>
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<td>.13*</td>
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<td>.06</td>
<td>.002</td>
<td>.001</td>
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<td>-.06</td>
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* Significance Level of .05
** Significance Level of .01
REFERENCE LIST


eexamination of endorser type and gender on two audiences.
promote incidental encoding? Journal of Experimental
Social Psychology, 21, 284-300.
predictor of ad recall. In T. C. Kinnear (Ed.), Advances
in consumer research: Vol. 11 (pp. 259-264). Ann Arbor, MI: Association for Consumer Research.
role self-concept in masculine and feminine product
perceptions. In W. Wilkie (Ed.), Advances in consumer
research: Vol. 6 (pp. 559-605). Ann Arbor, MI: Association for Consumer Research.
Hovland, C., Janis, I., & Kelley, J. (1953). Communication
and persuasion. New Haven: Yale University Press.
Jacoby, L., & Craik, F. (1979). Effects of elaboration of
processing at encoding and retrieval: Trace distinctiveness
and recovery of initial context. In L. S. Cermak & F. Craik (Eds.), Levels of processing and human memory (pp. 1-22). Hillsdale, NJ: Erlbaum.
Jose, P. (1989). The role of gender and gender role similarity
in readers' identification with story characters. Sex Roles, 21(9/10), 697-713.


Personality and Social Psychology Bulletin, 10(4), 574-584.


VITA

In the early 1960's Friedrich Liewald moved from Furth-Bayern, Germany to the United States with his training as a master mechanic for Mercedes Benz to work for Knauz Continental in Lake Forest, Illinois. At about the same time period, Margarete Peucker moved from Berlin, Germany to work for the Palmer House Hotel in Chicago as a floor manager. A short while later, they met through mutual friends, got married, and in the following five years had three children. I, Elke Liewald, am the youngest of these three children, born November 4, 1968 in Lake Forest, Illinois. My parents valued school and hard work highly and constantly stressed the importance of both. My mother continued her education by taking college classes. When I started junior high, I began reading and studying my mother's college texts. It was at that time I became very interested in studying psychology. From then on, I knew I would study psychology in college and hopefully go on to graduate school for my Ph.D.

When I started college at Loyola University of Chicago, I was mostly interested in developmental and child psychology. However, by my third year of college, applying psychology to social problems, the workplace, and organizations became more appealing to me. During the summer of 1989, I assisted on a
study examining attitudes toward and experiences with epilepsy that was being conducted by one of my psychology lab instructors, Claudia Lampman. It was here that I received by first real hands-on experience with data collection (phone survey) and coding. In May of 1990, I graduated Loyola with a B.S. in psychology and minors in both women's studies and sociology. My academic honors included being on the dean's list for 6 semesters, a member of Psi Chi, and graduating Cum Laude.

In September of 1990, I started my graduate work in the Ph.D. program in Applied Social Psychology at Loyola University of Chicago. To help pay for school during my undergraduate and graduate studies, I also modeled full-time (i.e., print, runway, commercial, and television). Being behind the scenes, I saw how television shows, print ads, industrial films, and commercials were produced and manipulated to create their intended effect and influence on their targeted audience. Consequently, at the outset of graduate school I was predominately interested in learning about applying psychology to the field of advertising and consumer behavior, studying such areas as attitude formation and change, motivation, and the three aspects of a communication (source, message, recipient factors).

During my first year of graduate school, I did some statistical analyses for Dr. Bernard Dugoni for his study concerning interviewer bias. I received an assistanship
during my third year and worked with Dr. Linda Heath, assisting her with her research and the two classes she taught (General Psychology & Gender and Sex Differences and Similarity). My teaching duties included grading papers, attending and helping with her class, giving a lecture both semesters, holding office hours to help students and answer questions, and tabulating grades. I also became involved in the two studies she was working on at that time. One study examined mass media use, experience with guns and crime, and gun control attitudes. For this study I gathered police data and did data analysis. Dr. Heath's other study concerned psychological aspects of infertility, using perceived control as an organizing construct. My role in this research was to gather past studies on infertility and code them for inclusion in a meta-analysis, in order to see if there were trends in past research findings.

As aforementioned, my own research interest was in attitudes and communication factors, as applied to advertising and consumer behavior. My master's thesis, "The mediating effect of self-referencing in consumer responses: Effect of message recipient's sex and gender and sex of message communicator(s) on responses and evaluations of a radio ad", stemmed from my interest in advertising and consumer behavior. The title is descriptive of what I examined. The experience I gained from conducting this study and writing my thesis was invaluable because I was forced to draw on a lot of knowledge
and skills that I had learned throughout graduate school. The next step in my professional training is to prepare for my candidacy exam. I would like to focus my five areas on applying psychology to work and organizations. Studying group dynamics, motivation, taking a program evaluation class, and taking two classes in the Human Resources and Industrial Relations Department has given me a taste of what I would like to further concentrate my studies on for both the candidacy exam and my dissertation.
The master's thesis submitted by Elke K. Liewald has been read and approved by the following committee:

Fred Bryant, Ph.D., Director
Professor, Psychology
Loyola University Chicago

John Edwards, Ph.D.
Professor, Psychology
Loyola University Chicago

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the committee with reference to content and form.

The thesis is, therefore, accepted in partial fulfillment of the requirements for the degree of master.

3/23/95
Date

[Signature]
Director's Signature

(Printed 8/94)