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The Effect of Television Food Commercials on the  
Consumer Socialization of Teenagers in Puerto Rico

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THE EFFECT OF TELEVISION FOOD COMMERCIALS ON THE  
CONSUMER SOCIALIZATION OF TEENAGERS IN PUERTO RICO

By

Wanda Del Toro

A DISSERTATION

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## ABSTRACT

### THE EFFECT OF TELEVISION FOOD COMMERCIALS ON THE CONSUMER SOCIALIZATION OF TEENAGERS IN PUERTO RICO

By

Wanda Del Toro

This investigation tested the effects of television food commercials on the snacking preferences and behavioral intentions (consumption intentions and purchasing intentions) of teenagers in Puerto Rico.

Consumer socialization provided the theoretical framework. This theory states that adolescents acquire consumption-related skills, attitudes, and knowledge from different socialization agents. Television has been considered a socialization agent capable of awakening and creating desires to consume advertised foods.

Within the consumer socialization framework, two models (Moore and Moschis' General Model of Consumer Learning and Krugman's Low Involvement Learning Model) were combined into a "Consumer Socialization Model of Teenagers in Puerto Rico in the Area of Foods." This model tests if attitudes towards commercials have a mediating effect on food preferences and behavioral intentions.

A posttest only control group experiment with four conditions (three treatment groups and a control group) was conducted in three high schools in Puerto Rico with a sample of 234 subjects. Treatment One viewed food commercials for low-nutrition foods; Treatment Two viewed

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food commercials for pro-nutrition foods; Treatment Three viewed a combination of commercials for low- and pro-nutrition foods; the Control group viewed nonfood commercials. Each condition viewed four commercials twice embedded in seven vignettes videotaped from the Spanish International Network. Subjects completed a questionnaire and were debriefed. Students were randomly assigned to four classrooms, and the four treatments were randomly assigned to the groups. Gender was fairly equally distributed in each class group. Four female experimenters were rotated across conditions for each of the three experimental days. Production quality of the commercials was controlled through a freezing-frame method synchronized with the original soundtrack.

Overall, teenagers intended to consume and buy low-nutrition foods. Although those exposed to pro-nutrition foods did not prefer those foods, they did intend to consume them. The combination group preferred, intended to consume and buy the foods they saw. The mediating effect of attitudes towards commercials was not supported. The data supported Krugman's model. As Krugman suggests, television commercials may be altering people's perceptual structure such that they develop preferences and behavioral intentions without necessarily developing a favorable attitude towards the commercials.

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## CHAPTER I

### INTRODUCTION

The purpose of this study was to test the effects of television food commercials on the snacking preferences and behavioral intentions of teenagers in Puerto Rico. The general question that motivated this investigation was: Does exposure to television food commercials produce more preference for certain types of foods and the behavioral intentions to consume and purchase these foods? More specifically, this study attempted to show experimentally the consumer socialization effects of television commercials for low-nutrition and pro-nutrition foods on the snacking preferences and behavioral intentions of teenagers in Puerto Rico.

Consumer socialization theory says that adolescents acquire consumption-related skills, attitudes, and knowledge from different socialization agents. Television is considered a socialization agent that could awaken or create a desire to consume advertised foods. This function is reflected in the fact that the typical American sees approximately 350,000 commercials before high school graduation (Jeffrey, McLellarn, & Fox, 1982). There is much concern from different academic and health circles about the consumption patterns that are developed during childhood and adolescence because they are believed to carry on to adulthood.

By the time children reach adolescence, they have been extensively exposed to food messages. Food advertising represents a big investment in Puerto Rican television (Wagner, 1985). Advertisers attempt to attract an audience who will view the commercials and buy the advertised products (Geis, 1982). This creates a theoretical interest as to the extent of advertising's influence on consumer learning, as reported by teenagers. From a marketing perspective, teenagers are a potential market of consumers (Cateora, 1963; James, 1971). Consideration of teenagers as consumers has intensified because of health concerns and to facilitate predictions of their future actions as adult consumers.

When children reach adolescence, they have already undergone socialization whereby adults and mass media have informed them about consumption patterns and desirable foods to eat, among others. Certainly, communication effects do not operate in a vacuum nor as a strict stimulus-response pattern. Many variables in the environment contribute to the socialization of adolescents, e.g., family, peers, school, other mass media, which may facilitate, inhibit, or counteract television learning (Comstock, Chaffee, Katzman, McCombs, & Roberts, 1978; McLeod & O'Keefe, 1972). Ward and Wackman (1971) indicate that "consumption behavior is a social process, involving overt communication with others, not simply an individual psychological process triggered by exposure to advertising" (p. 423). But as Markin (1969)



indicates, "the media or channels of communication can themselves be an effective force for bringing about desired results in the range or characteristic set of behavior patterns produced by the communication process" (p. 169). Moreover, a study by Moschis and Moore (1978) suggests that television may be a more "significant source of learning some normative aspects of consumer behavior" than parents and school (p. 288).

Research on consumption preferences of children is a prelude to the study of adolescent consumer learning. That television commercials influence children less than 12 years of age has been extensively documented (Atkin, 1980; Liebert, Sprafkin, & Davidson, 1982; Pearl, Bouthilet, & Lazar, 1982; Sharaga, 1974). It is not as clear for adolescents. Several survey studies have explored the possible influences of television commercials on adolescents from a consumer socialization perspective (Moore & Moschis, 1978; Moore & Stephens, 1975; Moschis & Moore, 1978). Experimental studies on this population are scarce. Research on the influence of television advertising on Puerto Rican adolescents is almost nil. The first study was a self-report on 225 teenagers enrolled in high schools in Puerto Rico (Del Toro, 1986; Del Toro & Greenberg, 1987). This study constituted the exploratory investigation for this dissertation.

Given the scarcity of sources dealing with these issues in Puerto Rico, research results and theories developed from

studies conducted in the United States provided a framework for this investigation. Puerto Rico is a territory of the United States, but it has not been considered a focus for research on the impact of television food advertising on its teenage population.

For 89 years, Puerto Rico has had direct ties with the United States (National Puerto Rican Coalition, 1985). Puerto Rico is a Commonwealth and its people are U.S. citizens. Television has been one of the many sources of contact with American culture and eating styles. Through imported television programming, satellites, and the rapid expansion of the cable television industry in Puerto Rico, U.S. television programming and commercials have become a steady part of the daily television diet.

Adolescents in Puerto Rico face the socialization process of both the Puerto Rican and the American cultures (Moran, 1973). It has been suggested that Puerto Ricans have been Americanized by the everpresent influence of American ways in every aspect of Puerto Rican lifestyle (Beirne, 1975; Colon-Rivera, 1977; de Granda, 1972; Del Toro, 1985; Negron de Montilla, 1971; Rodriguez-Morales, 1970; Seda-Bonilla, 1972). Most snack food commercials are for American products (Migenis, 1986; Wagner, 1985); for example, the whole gamut of soft drinks, chocolates, and chips. Moreover, the eating behaviors and food preferences observed on television can be modeled by Puerto Ricans because of the rapid expansion of fast-food chains and other

American food businesses in Puerto Rico (Candales-Castro, 1973; Echevarri, 1985; Espadas, 1970; Migenis, 1986).

Consumer socialization is, then, the theoretical framework most relevant to these issues, and social learning theory is at the basis of this theoretical approach. Given the importance of nutrition during adolescence and the possible socialization effects of television on the food consumption patterns of teenagers, the next chapter begins with a section on television and food consumption which incorporates results from communication research and from nutrition-related research dealing with food consumption behaviors of adolescents. The second chapter will also expand on the theoretical framework as it relates to adolescents' consumer socialization in the area of foods.

## CHAPTER II

### THEORETICAL FRAMEWORK

#### **Television and Adolescent Food Consumption**

Television food commercials convey information about the adequacy of consuming whatever product is being advertised (Atkin & Heald, 1977). This does not necessarily mean that the foods are advertised for their nutritional attributes. On the contrary, food products are generally promoted in terms of their taste, texture, and ingredients; "...eating habits apparently have fallen behind nutritional knowledge...perhaps it is simply that tastes and preferences get in the way of good nutrition" (Woods, 1981, p. 67). Data gathered by Goldberg and Gorn (1974) showed that those children who viewed commercials about healthy foods were more inclined to choose fruits for snacks; those who viewed candy commercials tended to select sweets and soft drinks for snacks.

Therefore, this study investigated the effects of television commercials for food products varying in nutritional value because advertising may be creating in teenagers desires for expensive or unhealthy food products. As indicated in the Introduction, this study experimentally examined the consumer socialization effects of television commercials for pro- and low-nutrition foods on the snacking preferences and behavioral intentions of teenagers

in Puerto Rico. It is important, then, to distinguish between these types of foods. Pro-nutrition foods usually refer to foods that are low in calories and/or high in nutrient content; low-nutrition foods refer to foods high in calories and/or low in nutrient content (Feshback, Jordon, & Dillman, 1978).

As described below, nutritionists have profiled adolescent eating behaviors (Kreutler, 1980) as congruent with what mass media researchers have found from television content analyses (Kaufman, 1980). The great similarity between both sets of findings from two different academic/research areas helped conceive the idea that television depictions of how to eat and what to eat may be influencing adolescents' food preferences and behavioral intentions to purchase or consume certain foods.

Kaufman (1980) studied the American prime-time diet in television shows and commercials. She argues that "[a]lthough American consumers have available to them plentiful and widely diversified sources of food, they do not make wise food choices" (Kaufman, 1980, p. 37). Kaufman (1980) adds that "television serves as an important source of social learning" (p. 37). Therefore, the purpose of her study was "to investigate what messages related to food, eating behavior, and ideal body image are presented on...prime-time American network television" (p. 37). The foods and eating behaviors, which emerged from the content analysis of a sample of prime-time programs and commercials,

were analyzed for their nutritional value and were compared with standards set forth by nutritionists. Results showed that the television diet emphasizes the consumption of non-nutritious foods as well as eating behaviors which are inconsistent with guidelines agreed upon by nutritionists. Program content was a higher source of food messages than commercials. Most of the foods analyzed were packed with salt, sugar, fat, and were low in essential nutrients. They were mostly snacks and soft drinks promoted by extremely thin or average weight characters (Kaufman, 1980). The eating patterns encouraged as a way of life were those of eating on the go and snacking (Alston, 1973). Specifically, the analyses indicated that:

...television characters rarely ate a balanced meal, gave full attention to what they ate, or ate explicitly to satisfy hunger. Instead they snacked between meals, ate on the go, and used food primarily for the satisfaction of social and emotional needs. The patterns of food choice and eating behavior on television, in short, are patterns usually associated in real life with problems in weight control and nutrition. (Kaufman, 1980, p. 45)

During adolescence teenagers become more interested in their appearance. This makes them a target for advertisements. Because they are in their puberty stage, they tend to be more self-conscious and more open to new

ideas that will enhance their ability to make impressions. Erratic eating behaviors emerge in their desire to conform to cultural ideals of a lean physique (Kreutler, 1980; Nutrition & the M.D., 1982). Dr. Judith Rodin, social psychologist, expresses a fear that these irregular behaviors may destroy the normal processes of weight regulation, since they affect the metabolism rate which is still not set for adulthood (Hall, 1984). This sharply contrasts with the results of Kaufman's study. The body types depicted were predominantly thin and average. "The television 'diet' may be unbalanced and fattening, but characters in commercials and programs alike remain slim and healthy" (Kaufman, 1980, p. 37).

Nutritionists indicate that during the adolescent years, snacking is a way of life (Kreutler, 1980; McNutt & McNutt, 1978; Nutrition & the M.D., 1982) . A snack is a quantity of food or drink usually taken between regular meals. As Kreutler indicates, the nutritional requirements vary according to the different growth patterns of adolescence. As growth and appetites peak, so do psychological and social pressures. These sources of pressure alter adolescents' response to food. "Food choices are likely to be made on the basis of peer pressure, sociability, status, and enjoyment, rather than on the basis of nutrient content or health reasons...The most striking changes in teenage eating habits are meal skipping, between-meal-snacking, and more frequent meals away from home

(Nutrition & the M.D., 1982, p. 234). Kreutler (1980) reports a survey study which indicates that "although the influence of peers is significant, ...it is modified by individual preferences as well as by the influence of family food patterns" (p. 545).

Adolescents tend to have casual attitudes toward eating that are greatly influenced by peers (Kreutler, 1980; Vallecillo, 1979). This aspect of adolescent lifestyle has a high resemblance to the eating patterns of television characters in Kaufman's (1980) study. So their growing desire for independence, peer acceptance, and socializing may conflict with increased physiological needs for more food.

According to Kreutler (1980), the active social life of adolescents tends to interfere with normal mealtimes.

In early adolescence eating patterns are likely to be regular because these youngsters still spend most mealtimes at school or at home....But by the mid-teens, adolescents increasingly are somewhere other than at home at mealtimes, and food availability tends to determine their food choices. When hunger strikes it's easy to get a soft drink with a packet of cookies from a vending machine or to join the crowd for pizza or a burger and fries. (Kreutler, 1980, p. 545)

As Winick (1982) indicates, adolescents "always seem to be eating. They eat a lot more than three times a day;....snacks can and do make significant nutritional



contributions" (p. 37). Although nonadolescents can also eat more than three times a day, this characteristic is crucial for adolescents because their growing bodies require large amounts of calories and nutrients. "Without snacking, an active teen-ager...would have to eat very large meals to support growth and exercise" (McNutt & McNutt, 1978, p. 305). Time constraints due to their many activities or inability to consume large quantities of foods during each of the standard three meals make snacks important sources of necessary nutrient and caloric requirements.

The problem lies in the selection of snacks. Teenagers can easily eat three meals plus snacks per day to meet caloric demands. "Depending on the choice of snack foods, individual nutrients may be in short supply" (Kreutler, 1980, p. 545). "The nutritional problem for most teen-agers therefore generally boils down to getting enough nutrients from dairy products and vegetables" (McNutt & McNutt, 1978, p. 301). Iron and calcium consumption is usually inadequate among teenagers (Kreutler, 1980; McNutt & McNutt, 1978, Nutrition & the M.D., 1982). They like food that can be prepared and eaten quickly, whenever they feel like it, when they are in a hurry, and when they are with their friends. So they customarily reach for snack foods, such as sweets and baked goods, and/or fast-food meals. The main reason why nutritionists (Kreutler, 1980) believe those foods add up to poor nutrition is because they contain loads of fat, sugar, and salt. During adolescence consumption of

beverages other than milk and juices increase, such as soft drinks, coffee, and tea (Kreutler, 1980; McNutt & McNutt, 1978). Teens' "fill-me-ups" are usually pie/cakes/cookies, hamburgers, pizza, fried chicken, french fries, candies, all of which are heavily advertised. In a summary statement, Kreutler (1980) indicates that "[e]ating behaviors and food preferences are influenced by the school environment, by friends, and by the mass media" (p. 550).

A study of food preferences among teenagers in Puerto Rico (Del Toro, 1986; Del Toro & Greenberg, 1987) again showed similarities with what television characters eat. Snacking behavior was frequent for 62%, and 34% said they snacked but not very often (Del Toro, 1986). Their most preferred snacks were sandwiches/breads, soft drinks, and cakes/donuts/cookies which are heavily advertised food products (Wagner, 1985).

Research suggests that repetition enhances learning and creates awareness of products (Greenberg & Suttoni, 1973). Moschis and Moore (1978) found that highly exposed adolescents prefer advertised brands. Ward and Robertson (1972) found that teenagers tend to purchase consumer products after seeing them advertised in commercials.

It has also been suggested that advertising stimulates a greater consumption of other brands within the same generic product category (Atkin, 1982). This suggestion could easily apply to low-nutrition foods which have diverse brands. However, pro-nutrition foods are both generic and

nongeneric products. For example, milk, cheese and fruit juices are generic products in Puerto Rico. Milk brands advertised in commercials aired in Puerto Rico include Pet, Carnation, Indulac, Farm Best, Industria Lechera, and Suiza Dairy. But when people think about milk, they do not focus as much on the brand as for low-nutrition foods (Pasalacqua, 1986). Cheese brands advertised in Puerto Rico include Kraft, Borden, and Brookfield, among others. Examples of brands for fruit juices include Lotus, Suiza Fruit, Libby's, and Del Monte. But the situation differs for pro-nutrition foods such as fruits and vegetables. These are mainly nongeneric, unless they are canned, and there are very few commercials for these pro-nutrition foods.

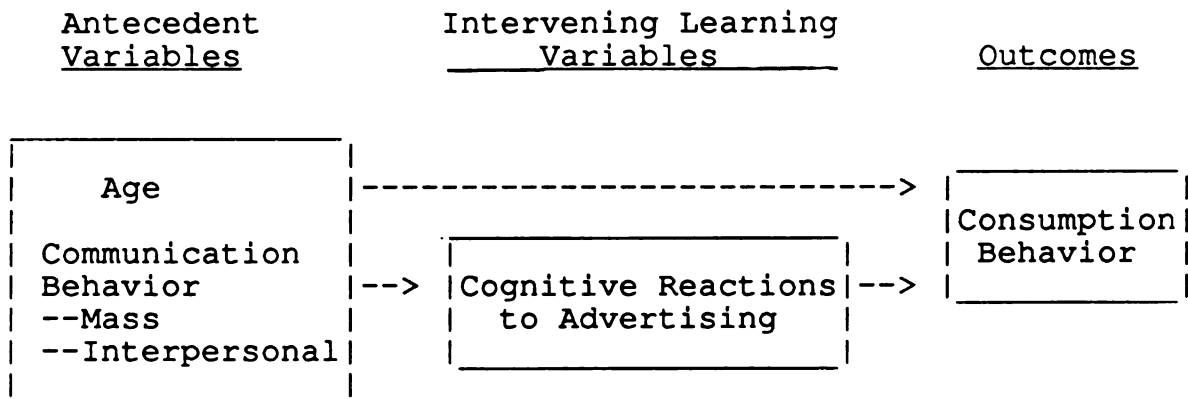
Therefore, this study investigated how food advertising can stimulate the consumption of other low-nutrition foods or of other pro-nutrition foods in the same generic category or other categories of the same nutritional level. Even though teenagers may not intend to purchase the particular product advertised, the commercials may stimulate a consumption desire for similar low- or pro-nutrition snack products like in Goldberg and Gorn's (1974) study.

**Consumer Socialization**

As Goslin (1969) points out, "a theory of socialization must be based upon a theory of behavior and a theory of learning" (p. 5). Furthermore, "socialization processes are characterized by attitude formation and learning processes" (Ward & Wackman, 1971, p. 417). Therefore, the theory of teenagers' consumer socialization of foods relevant to this investigation relies heavily on the social learning component of consumer socialization theory.

Moore and Moschis (1978) created a General Model of Consumer Learning where the antecedent variables are age and communication behavior [mass (television) and interpersonal (family and peers)]; cognitive reactions to advertising constitute the intervening learning variables (susceptibility to advertising, attitudes toward advertising in general, perceived credibility of advertising, and message retention); and where consumption behavior is considered the outcome of the consumer learning process (see Figure 1).

Figure 1. General Model of Consumer Learning\*



-----  
 \* In Moore, R. L., & Moschis, G. P. (1978). Teenagers' reactions to advertising. Journal of Advertising, 7(4), p. 27.

Moschis and Moore (1978) found that "adolescents appear to learn from television what socially desirable consumer behaviors and cognitions consist of" (p. 287). Awareness of brands and products increases as adolescents are exposed to an increasing number of commercials (Comstock, et al., 1978; Moschis & Moore, 1978). Moschis and Moore (1978) refer to this process as consumer socialization.

The concept of consumer socialization refers to "the process by which young people acquire consumption-related skills, attitudes, and knowledge" (Moschis & Moore, 1978, p. 277). This term is equivalent to what Ward and Wackman (1971) call "'consumer learning' processes--i.e., processes by which adolescents acquire skills and attitudes relating to the consumption of goods and services" (p. 415).

Sociologists conceptualize the social learner as "consciously making choices..., and deciding as well as being unconsciously induced to acquire new skills or alter existing behaviors" (Goslin, 1969, p. 3).

In this study, the issues revolve around the skills and attitudes individuals acquire from television food commercials, and "how they are induced to perform socially prescribed acts based on what they have learned" (Goslin, 1969, p. 4), in particular, the behavioral intentions to consume or purchase food products endorsed by television. This type of learning is particularly decisive in future consumer behavior. McLeod and O'Keefe (1972) indicate that

the study of socialization was once synonymous with the study of early childhood. In recent years, however, socialization research has been extended to learning throughout the person's lifetime. While there is undoubtedly a reasonable degree of consistency across age categories for some behavior patterns, it is clear that new behavior patterns emerge at all stages of development. (p. 129)

Adolescence is considered a crucial period for consumer socialization (Moschis & Moore, 1978; Ward, 1974). Adolescents are at a transitional stage where they are neither adults nor children (Bachman, O'Malley, & Johnston, 1978; Coleman, 1974; Friedenberg, 1964, Kaplan, 1986), but at the same time they are adults and children, and they are exposed to ads for adults and children (James, 1971).

Because adolescents are at this in-between phase, in a few years time span, they will be part of the adult segment of the television audience. The food consumption behaviors they develop at this stage will most likely carry on to the adult phase, and eventually will have their socialization influence on their own children (Cateora, 1963; James, 1971). What is learned during childhood and adolescence has implications for adulthood (Ward, Wackman, & Wartella, 1977). As Ward (1974) points out "at least some patterns of adult consumer behavior are influenced by childhood and adolescent experiences" (p. 7).

Goldberg, Gorn, and Gibson (1978) found that exposure to either pro-nutrition or low-nutrition commercials affected verbalized food preferences. Using a paper-and-pencil test of food preferences, this study measured what first graders said they would select for snacks and breakfast. They selected more highly sugared foods after exposure to commercials for these types of foods. Children who viewed pro-nutrition commercials selected more unsugared products such as fruits and vegetables. This experimental study suggested that television food commercials can affect the food preferences of viewers.

Gorn and Goldberg (1980) exposed 150 five-to-eight year olds attending a summer camp to a 30-minute TV program with 4.5 minutes of food messages every day for 14 days in four groups. The messages were for either candy commercials, or healthy food commercials, or public service announcements on

balanced diets urging moderation in sugar consumption, with a control group of the program without commercials. After daily exposure, subjects individually selected foods from a table of snacks containing two fruits, two "sweets," and two drinks. At the end of the 14-day period, subjects completed a post-exposure interview. Findings indicated that subjects exposed to healthy food commercials chose more fruits than subjects exposed to candy commercials.

Jeffrey, McLellarn, and Fox (1982) argue that television food commercials for children are a source of modeled eating behavior. They investigated the effects of low-nutrition, pro-nutrition, and nonfood commercials on the eating behaviors of forty-seven four- and five-year olds. Subjects individually answered a behavioral eating test and food attitude scale prior to exposure. One week later, the children in each group were exposed to three different 30-second ads shown twice in the context of a nine-minute cartoon segment. The low-nutrition group saw commercials for Pepsi, Fritos, and Hershey chocolates; the pro-nutrition group saw commercials for grapes, milk, and cheese; the control group saw commercials for three popular children's toys. Findings suggested that low-nutrition commercials were most effective in increasing total caloric consumption. Pro-nutrition commercials were not effective in increasing consumption of pro-nutrition foods. The authors assure representativeness of the pro-nutrition commercials used in their study. They suggest that this lack of effectiveness



may have been due to differences in budget allocation to the production of low- and pro-nutrition commercials.

As previously mentioned, social learning theory is at the root of consumer socialization theory. Social learning focuses on socialization agents (Moore and Moschis, 1978), and it significantly contributes to the theoretical foundation of adolescents' consumer socialization of foods.

According to social learning theory (Bandura, 1977), people learn by observing and imitating the behaviors of others. This perspective conceptualizes learning behaviors through the imitation of performances observed directly or through a mass medium such as television (Bandura, Ross, & Ross, 1963). If people learn by observing others as this theory postulates, then people should learn by viewing others on television. Especially during their formative years, children and teenagers can learn appropriate and inappropriate behaviors by observing the behaviors of television characters (Akers, 1973; Atkin, 1972; Bandura, 1973; Greenberg, 1975; Greenberg & Heeter, 1983; Mauleon de Benitez, 1978; Rosenthal & Zimmerman, 1978; Rushton, 1980). After a review of over three dozen studies, Rushton (1982) concludes that "people learn from watching television, and what they learn depends on what they watch" (p. 255).

Based on social learning theory (Bandura, 1977), portrayals on television commercials can serve as models as to what are or are not the most adequate or appropriate foods to eat. Bandura (1977) believes that showing children

the behavior you wish them to learn and enact is the best and most effective way to teach children new behaviors and their consequences. McLeod and O'Keefe (1972) indicate that "[m]odeling processes involve imitation as the key mechanism, either through the conscious attempts to emulate the socialization agent or simply because the agent's behavior is the most salient alternative open to the person" (p. 132). Accepted behavior patterns are expressed in the mass media (Cateora, 1963). Thus, they could potentially be effective in shaping consumer orientations.

Galst (1980) investigated the role of observational learning from television commercials on 65 three- to six-year olds' actual behavioral snack selection. The addition of an adult's evaluative comment regarding the nutritiousness of the advertised products was hypothesized to mediate snack choice behavior. During the two weeks prior to the experiment, baseline data were collected. Each day, over a four-week period, subjects in group conditions were exposed to two different cartoons and 4.5 minutes of commercials. Before, between, and after the two cartoons, children were exposed to sugared- or unsugared-food commercials, and pro-nutritional public service announcements (PSAs) with or without adult comments about the portrayed products. Daily exposure was followed by snack selection from a table displaying a large variety of sugared and unsugared foods. Subjects took a "snack sense questionnaire" on healthfulness of the advertised products

three days after viewing was completed. Those exposed to unsugared foods and pro-nutritional PSAs followed by adult comments chose significantly fewer sugared foods and got higher knowledge scores than did the control group. Subjects exposed to sugared food commercials followed by adult comments got the highest scores on the knowledge test. Older subjects had higher knowledge scores than younger subjects. The sugared food commercials apparently were of better quality than the PSAs and the unsugared food commercials (Galst, 1980).

Moschis and Moore (1978) examined the influences of television, family, school, and peers on the acquisition of four specific consumer skills -- brand knowledge, price accuracy, legal knowledge, and consumer role conceptions. This was a cross-sectional study where 607 students in middle and high schools completed a self-administered questionnaire. Findings suggested that peers serve as a significant source of consumer information. Television was also found to be a significant source of learning some normative aspects of consumer behavior, such as brand awareness. Parents and school contributed little to the development of the four consumer skills.

Ward and Wackman (1971) studied the consumer socialization of adolescents. They were interested in four criteria: recall of commercial content, attitudes towards television advertising, materialistic attitudes, and self-reported effects of commercials on buying behavior. They



were concerned with intrafamily communication about consumption matters and with two dimensions of media use--amount of print and television use, and motives for watching TV commercials. Subjects were 1,094 eighth through twelfth graders who answered a self-administered questionnaire in randomly selected classrooms in twelve schools. Authors theorize that adolescent consumer learning is a social learning process. Adolescents can use commercials for social purposes, that is, by watching commercials they can form impressions of what kinds of people buy certain products or brands, and they can develop associations of products with various life styles. Findings suggested that learning of advertising slogans was mainly a function of the adolescent's intelligence. The learning of more cognitive orientations, such as attitudes towards television advertising and a materialism orientation, was mainly a function of the adolescent's motives for viewing commercials. Communication with parents about advertising, consumer goods, and consumption processes was an important variable intervening between exposure to advertising and the purchase of consumer goods.

Jeffrey, McLellarn, and Fox (1982) conducted an experiment to determine whether the effects of food advertising are mediated by cognitive development or by social learning theory. According to social learning theory, commercials would affect consumption behavior regardless of cognitive level of development. Piagetian

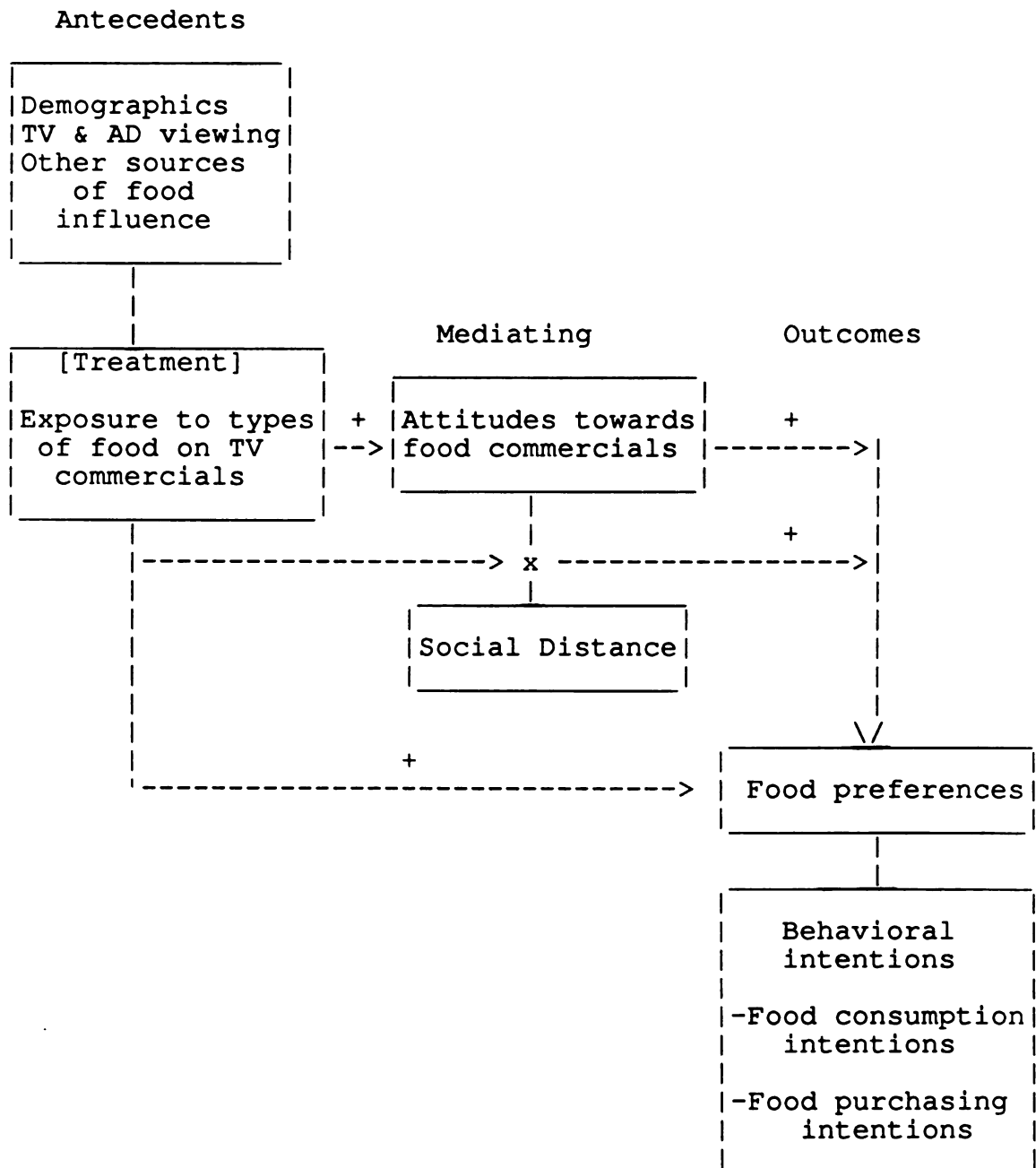
cognitive theory would predict that children become less susceptible to advertising influences as they mature cognitively. This pretest-posttest control group design was concerned with the effects of low-nutrition, pro-nutrition, and toy commercials on children's actual food consumption. Forty-eight four- and five-year olds and 48 nine- to ten-year olds were randomly assigned to the three experimental conditions. The independent variable was the type of commercials, and the dependent variables were a behavioral eating test and an interview. The low-nutrition group viewed two different commercials for Pepsi and for Fruit Loops; the pro-nutrition condition viewed two commercials for carrots and two for milk; the control group viewed four different toy commercials. Males in the low-nutrition group significantly increased their total caloric consumption; they also significantly consumed more low-nutrition foods and beverages after watching the commercials. Findings suggested that low-nutrition commercials increased the recall, purchase, and consumption of the products. Regarding the theories tested, age did not mediate advertising effects. Cognitive maturation of nine-year olds did not enable them to defend themselves better than the four-year olds. The authors indicate that social learning is more able to explain the findings, because males in the low-nutrition condition attended the stimuli, recalled the message, and imitated the portrayed behavior. Apparently low-nutrition commercials influenced behavior despite

cognitive maturity and distrust of commercials. However, low-nutrition commercials did not affect girls' consumptive behaviors. Pro-nutrition commercials were ineffective even though subjects attended and recalled the messages.

If people learn by observing others, then adolescents in Puerto Rico should also learn from watching others or from watching what is being portrayed on television commercials. Most importantly, the frequent observation of a range of behaviors displayed by television characters sends a message of the appropriateness of said behaviors. Thus, television has been considered an agent of socialization influencing consumer orientations.

The relationships under investigation can be schematically represented as follows:

Figure 2. Consumer Socialization Model of Teenagers in Puerto Rico in the Area of Foods





### **Treatment Variable**

The type of food advertised was the manipulated variable in this study. It had four levels: (1) low-nutrition foods; (2) pro-nutrition foods; (3) a combination of pro- and low-nutrition foods; (4) nonfood commercials. Since exposure was forced (Webster & Wakshlag, 1985), exposure to the television program and commercials was the treatment.

### **Antecedent Variables**

There are several variables that individuals bring into the treatment situation, and randomization should produce comparable groups. However, there are several variables, not under the control of the researcher, that should be measured because they are likely to affect the outcomes of the study.

**Age:** Adolescence has been defined "as a period of training and preparation for future...adult roles" (Goslin, 1969, p. 823). The adolescent stage usually comprises the ages of 13 to 19 years, what are called the "teen" years, but the top boundary for the age range varies among authors. The general consensus is that teenagers are no longer so when they marry, or get a full time job, or both, and they start assuming adult roles. In a study which profiles adolescents by integrating research findings on their mental, emotional, social, and moral characteristics, Schnell (1946) categorized adolescence into four groups:

(1) preadolescence: 10-12 years; (2) early adolescence: 13-15 years; (3) middle adolescence: 16-18 years; and (4) late adolescence: 19-21 years. The usual age range used by social science researchers is from 13 to 17-19 years of age. The Rand Youth Poll has found that 16 to 19 year olds are "the biggest spenders in the teen market" (James, 1971, p. 6). According to Schnell's categories, these big spenders fall almost entirely within the middle adolescence range. Therefore, the subjects for this study will be students enrolled in their third year of high school (juniors). This group is 16 to 17 years old falling in Schnell's middle adolescence category and in the lower portion of The Rand Youth Poll segmentation.

**Other Predictor and Control Variables:** Two additional demographic variables to be measured are gender and money available. Some research has found gender differences regarding exposure to television commercials and adolescent socialization (Campbell, 1969; Del Toro & Greenberg, 1987; McLeod & O'Keefe, 1972). As age increases, the more likely teenagers will have more money available either because of allowance increases or because of part-time jobs (Cateora, 1963; James 1971). According to a previous study (Del Toro, 1986), the average weekly allowance for Puerto Rican teenagers was \$8.33 with a median of \$5.05; 52% receive an allowance regularly, and 23% sometimes. Since The Rand Youth Poll has found the 16-19 age group to be big spenders, amount of money available will be assessed.

General television and advertising exposure will be measured as control variables. A general measure on teenager's perception of other sources of food influence, such as parents, friends, school, other media, will help control for these intervening sources of influence.

### **Outcome Variables**

The outcomes of teenagers' consumer socialization should be reflected in their food preferences and behavioral intentions. **Food preference** is an indicator of the attitude towards and acceptance of a particular food (Day, 1970). But preferring a food is only an indicator of a predisposition which may or may not materialize in an overt behavior. Therefore, their behavioral intentions to purchase or consume snack foods also will be measured. Intentions are considered the conative component of attitudes (Ajzen & Fishbein, 1980; Fishbein, 1975).

**Behavioral intention** "refers to a person's subjective probability that he will perform some behavior" (Fishbein, 1975, p. 288). **Food consumption intention** is defined as a behavioral tendency to consume a particular food purchased or not by them. Most teenagers live in a household that has a number of food products available and that they may or may not intend to consume. **Food purchasing intention** is defined as a behavioral tendency to buy a particular food product. Since many adolescents have a purchasing power (measured by allowances, jobs, gifts of money, etc.), this

study will assess their intentions to invest in food products.

### **Mediating Variable**

A mediating variable links other variables (Kenny, 1979, p. 53). **Attitudes towards television commercials** is believed to mediate exposure to food commercials and teenager's food preferences and behavioral intentions to buy or consume particular foods.

An **attitude** may be defined as "a predisposition, inferred from some behavior, to react favorably or unfavorably to a class of objects" (James, 1971). Two types of attitudes are relevant to this study: attitudes towards television food commercials and attitudes towards food products. The mediating variable in this study is attitudes towards television food commercials. Attitudes towards food products are considered food preferences and were already addressed in the previous section on Outcome Variables.

Several studies have found that attitude toward the advertisement mediates brand attitudes and purchase intentions (Gelb & Pickett, 1983; Mitchell & Olson, 1981; Shimp, 1981).

Gelb and Pickett (1983) hypothesized a link between perceived humor and favorable attitude toward the ad, and a link between liking/disliking of ads and four specific advertising outcomes--attitude toward the sponsor/brand, credibility of the ad, persuasiveness of the ad, and stated intention to purchase the advertised product. An envelope

containing a cover letter asking cooperation, an advertisement, a questionnaire, and a postage-paid return envelope was mailed to a random sample of 2400 licensed drivers. Two different ads about smoking cessation were used; half of the respondents received one ad and the other half received the other. There was a 20% response rate. Findings suggest that people form an unfavorable or favorable attitude toward a particular ad, which in turn affects their attitude toward what is being advertised and other measures of advertising effectiveness, including brand choice. Liking/disliking the ad was the variable significantly associated with all the effectiveness measures. The study concluded that perceived humor may aid advertising effectiveness, but the relationship was for the most part moderated by liking of the ad in which the humor was perceived. A significant association was found between perceived humor and agreement that the sponsoring agency was worthy of support.

Mitchell and Olson (1981) interpret the measure of attitude toward the advertisement as reflecting "subjects' evaluations of the overall advertising stimulus" (p. 327). The authors identified attitude-toward-ad as a construct influencing attitude toward the brand, and attitude toward purchasing and using the brand, thus affecting the likelihood of a purchase decision. Their research tested the effect of beliefs about four brands of a product on attitude toward each brand. The study examined Fishbein's

proposition that beliefs are the only mediators of attitude formation and change in a marketing research context. They were interested in whether beliefs about product attributes are the only mediator of brand attitude. The experiment involved random assignment of 71 junior and senior undergraduate students to four groups. Each condition viewed a different advertisement for fictitious brands of facial tissue to manipulate product attribute beliefs and to create brand attitudes. Two variables were manipulated: advertising content (through a verbal claim or visual information) and level of repetition. The manipulation of advertising content had significant effects on the strength of beliefs about several product attributes, attitudes toward both the brand and the act of buying the brand, and purchase intentions. As expected, product attribute beliefs mediated attitude formation. However, attitude toward the advertisement mediated brand attitudes and purchase intentions. They found that they could better predict brand attitude and behavioral intention if they took attitude toward the ad into account, along with beliefs about product attributes for each brand.

Based on Zajonc's (1980) work, Shimp (1981) indicates that a "highly desirable feature of the [attitude toward advertisement] approach is that it demands minimal cognitive processing from consumers, since affective reactions are relatively independent of cognition" (p. 10). Shimp (1981) uses classical conditioning as his theoretical framework to

explain the transference of affect from the ad to the brand. He argues that liking/disliking attitudinal responses become, over time, the response to an ad and also to the branded product on said ad. He presents theoretical arguments and empirical evidence to support the claim that attitude toward the ad mediates consumers' choice behavior. Findings from three experiments offered evidence that brand specific attitudes, and purchasing intentions and behaviors are influenced by consumers' attitudes toward the ads. In one of the experiments, for example, different cola drinks were experimentally manipulated. A main result indicated that attitude toward advertising was an important determinant of purchasing behavior.

Research on attitudes towards commercials reveals that commercials for food products use more emotional appeals (Crane, 1964) and are less informative (Aaker & Norris, 1982) than commercials for other products. Commercials for snack foods and desserts are particularly low in informativeness (Aaker & Norris, 1982, p. 64). Mitchell and Olson (1981) indicate that a feature of the attitude-toward-an-ad construct is that it is more affective than cognitive.

However, research evidence indicates that negative attitudes toward television advertising are likely to develop in adolescence (McNeal, 1969; Ward, 1972). One of the principal reasons for their negative attitudes is that teenagers think television commercials are deceptive (Moore & Moschis, 1978). In a study of the teenage market, over





fifty percent of the respondents listed commercials as the most disliked feature of television (James, 1971, p. 26). In general, students' attitudes towards commercials were negative and their reactions manifested a lack of confidence (James, 1971, p. 73).

James (1971) indicates that the principal reason for these negative attitudes relates to "the type of advertising to which they have been exposed. Students have a tendency to disregard the majority of advertisements to which they are exposed and to concentrate upon those that, on the basis of experience with a product, they have found to be misleading. A product that has appeared particularly enticing in an advertisement and has been found less than satisfying in actual use may account for much of the dislike of advertising" (James, 1971, p. 105). However, no distinctions are made for food advertising.

Studies which address attitudes towards television commercials usually lump attitudes towards food commercials with attitudes towards commercials for other product types (Del Toro, 1986; Moore & Moschis, 1978; Ward, Wackman, Faber, & Lesser, 1974). For example, 89 percent of Puerto Rican teenagers believe that television commercials do not always tell the truth. When asked which commercials do not tell the truth, only three percent were food-related. Actually these were for soft drinks; the rest were for detergents, liquor, perfumes, toiletries, cigarettes,

utensils, and a general expression of "a lot" (Del Toro, 1986).

Given the low distrust for food commercials, teenagers would be more inclined to expose themselves to them. When Puerto Rican teenagers were asked about their favorite food commercials, the most frequently mentioned were those for soft drinks, liquor, and fast-food places (Del Toro, 1986). Because food is a basic need and food commercials appeal to the senses and to biological drives, a positive attitude towards food commercials is hypothesized to mediate teenager's food preferences and behavioral intentions. The area of foods is considered of low involvement because there is less risk involved in consumption and purchasing situations (Vaughn, 1980).

Based on the existing evidence of negative attitudes towards television commercials, one might expect adolescents to tune out and not watch television commercials. But teenagers watch television and to a certain degree expose themselves to television commercials. In a study of the teenage market, James (1971) reports: "students indicate that they can essentially ignore advertising via any medium except television" (p. 87). Despite little attention and believability, teenagers consider television commercials as the "most interesting of all media advertising" (James, 1971, p. 88). Del Toro (1986) found that when commercials come on, 42% of Puerto Rican teenagers watch a few of them, 36% watch some, and 22% watch most of them. Even though

adolescents tune in to watch programs not commercials (Zillman & Bryant, 1985), to a certain degree, they are exposed to commercials and, thus, acquire some information from them (Steiner, 1966; Ward, 1972).

Therefore, Krugman's (1965) low involvement learning model was sought to help explain why adolescents learn about brands and products even though they dislike television commercials in general. Food is a pervasive commodity, so teenagers may not pay that much attention to the content of the food commercials. When surveyed, Puerto Rican teenagers indicated that the main reasons why they watch commercials are because: (1) they are entertaining, (2) they like what is being advertised, (3) commercial format--technical effects, setting, background, a particular character, phrase, or jingle (Del Toro, 1986). Commercials may be altering their perceptual structure such that they develop preferences for particular types of products without necessarily developing an attitude towards the commercials.

So "with low involvement one might look for gradual shifts in perceptual structure, aided by repetition, activated by behavioral-choice situations" (Krugman, 1965, p. 355). That is, when an advertised brand is seen, it is recognized and purchased many times on a trial basis. This may also translate to other products on the same low-nutrition or pro-nutrition level.

## Hypotheses

The above exposition of research guided by the theoretical framework of consumer socialization leads to six main hypotheses. Several subhypotheses postulating a priori contrasts are derived from these six hypotheses.

- H1: Teenagers exposed to televised commercials for specific foods will have more **preferences** for those foods **exposed** to than for foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.
- H1a: Teenagers exposed to television food commercials for low-nutrition foods will prefer those foods more than those exposed to pro-nutrition foods or nonfood commercials.
- H1b: Teenagers exposed to television food commercials for pro-nutrition foods will prefer those foods more than those exposed to low-nutrition foods or nonfood commercials.
- H1c: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have less preference for these types of foods than those solely exposed to either pro- or low-nutrition foods.
- H1d: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have more preference for these types of foods than those exposed to nonfood commercials.
- H2: Teenagers exposed to televised commercials for either low- or pro-nutrition foods will have more **preference** for foods of **similar** nutritional level to the ads seen than for foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.
- H2a: Teenagers exposed to television food commercials for low-nutrition foods will prefer similar foods more than those exposed to pro-nutrition foods or nonfood commercials.

- H2b: Teenagers exposed to television food commercials for pro-nutrition foods will prefer similar foods more than those exposed to low-nutrition foods or nonfood commercials.
- H3: Teenagers exposed to televised commercials for specific foods will have more **intention to consume** those foods **exposed** to than foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.
- H3a: Teenagers exposed to television food commercials for low-nutrition foods will intend to consume these foods more than those exposed to pro-nutrition foods or nonfood commercials.
- H3b: Teenagers exposed to television food commercials for pro-nutrition foods will intend to consume these foods more than those exposed to low-nutrition foods or nonfood commercials.
- H3c: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have less intention to consume these types of foods than those solely exposed to either pro- or low-nutrition foods.
- H3d: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have more intention to consume these foods than those exposed to nonfood commercials.
- H4: Teenagers exposed to televised commercials for either low- or pro-nutrition foods will have more **intention to consume** foods of **similar** nutritional level to the ads seen than for foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.
- H4a: Teenagers exposed to television food commercials for low-nutrition foods will intend to consume similar foods more than those exposed to pro-nutrition foods or nonfood commercials.
- H4b: Teenagers exposed to television food commercials for pro-nutrition foods will intend to consume similar foods more than those exposed to low-nutrition foods or nonfood commercials.

H5: Teenagers exposed to televised commercials for specific foods will have more **intention to buy** those foods **exposed** to than foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.

H5a: Teenagers exposed to television food commercials for low-nutrition foods will intend to buy these foods more than those exposed to pro-nutrition foods or nonfood commercials.

H5b: Teenagers exposed to television food commercials for pro-nutrition foods will intend to buy these foods more than those exposed to low-nutrition foods or nonfood commercials.

H5c: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have less intention to buy these types of foods than those solely exposed to either pro- or low-nutrition foods.

H5d: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have more preference for these types of foods than those exposed to nonfood commercials.

H6: Teenagers exposed to televised commercials for either low- or pro-nutrition foods will have more **intention to buy** foods of **similar** nutritional level to the ads seen than for foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.

H6a: Teenagers exposed to television food commercials for low-nutrition foods will intend to buy similar foods more than those exposed to pro-nutrition foods or nonfood commercials.

H6b: Teenagers exposed to television food commercials for pro-nutrition foods will intend to buy similar foods more than those exposed to low-nutrition foods or nonfood commercials.

### Interaction Hypotheses

Given the extensive influence of the United States in Puerto Rico, the degree of Americanization was a variable believed to interact with people's attitudes towards the commercials, particularly because most advertised snack foods originate in the United States. Of the commercials used in this study, two of the low-nutrition foods (Coca-Cola and Hersheys) and one pro-nutrition food (Kraft cheese) are of U.S. origin.

Bogardus' social-distance scale (Miller, 1977, p. 266) will be used to assess the degree of social acceptance between Puerto Ricans and Americans. Social distance "refers to the degrees and grades of understanding and feeling that persons experience regarding each other. It explains the nature of a great deal of their interaction" (Bogardus, 1925, p. 299). It is hypothesized that:

H7: More favorable attitudes towards food commercials in interaction with a closer social distance will mediate:

H7a: Exposure to televised commercials for specific foods and **preferences** for American foods exposed to than for other foods exposed to. There will be more preference for advertised US foods than for non-US foods.

H7b: Exposure to televised commercials for specific foods and the **intention to consume** American foods exposed to than for other foods exposed to. There will be more consumption intention for advertised US foods than for non-US foods.

H7c: Exposure to televised commercials for specific foods and the **intention to buy** American foods exposed to than for other foods exposed to. There will be more purchasing intention for advertised US foods than for non-US foods.

The specific demographic variables of age, gender, and money available were not the sources of separate hypotheses. These characteristics were studied in conjunction with the outcome variables.



## CHAPTER III

### METHODS

This chapter presents the research methodology and the analytical procedures used in this investigation. It is divided into the following sections to facilitate the presentation of the relevant topics: 1) subjects, 2) design, 3) procedure, 4) stimulus material, 5) variables, 6) human subject protection, and 7) statistical analyses. In summary, a posttest only control group experiment with four conditions was conducted in three high schools in Puerto Rico with a sample of 234 subjects. The data were analyzed using the Statistical Package for the Social Sciences on the CDC Cyber 750 computer at Michigan State University. Analytical techniques included correlations, factor analysis, multivariate analysis of variance and covariance, and group comparisons.

#### **Subjects**

High school students were chosen because they fall within the range of the adolescent stages. High school students enrolled in their third year (juniors) were selected for the experiment. The age range of the sample was 14 to 17 with 94% between 15 (26%) and 16 (68%) years of age. The majority fell on the lower portion of The Rand Youth Poll range of big spenders (16-19 years old). According to Schnell's (1946) categories of adolescence,

subjects represented the upper boundary of the early adolescence stage (13-15 years) and the lower boundary of the middle adolescence stage (16-18 years).

The experiment was conducted in three private Catholic high schools in the San Juan Metropolitan Area representing the regions of Hato Rey (n=89), Rio Piedras (n=77), and Santurce (n=68). The total sample was 234 subjects.

### **Design**

The experiment was a posttest only control group design with four conditions: three treatment groups and a control group. Treatment One viewed food commercials for low-nutrition foods (n=59); Treatment Two viewed food commercials for pro-nutrition foods (n=56); Treatment Three viewed a combination of commercials for low- and pro-nutrition foods (n=60); the Control Group viewed nonfood commercials (n=59). It was a single-factor design because only one independent variable was manipulated, namely, the type of food advertised. The study tested the efficacy of the types of food commercials, as a fixed effect, on influencing food preferences and behavioral intentions to purchase or consume certain foods. This model assumed that "all treatments about which inferences are to be made are included in the experiment" (Winer, 1971, p. 167).

In this design, pretests were avoided because they could sensitize subjects to the treatment variable and the posttest.

Students were randomly assigned to four classrooms, and the four treatments were randomly assigned to the groups to avoid systematic bias (Keppel, 1982). Gender was fairly equally represented in each class group considering that each school had more females than males. The total sample had 41% males and 59% females. The low-nutrition group had 24 males and 35 females; the pro-nutrition group had 21 males and 34 females; the combination group had 25 males and 31 females; the control group had 24 males and 34 females. A chi-square between gender and group conditions showed no significant relationship.

Randomization provided an assurance that the groups were statistically equal on variables that could be related to the outcome variables; it is "the most adequate all-purpose assurance of lack of initial biases between groups" (Campbell & Stanley, 1963, p. 25). As Kerlinger (1973) notes "[t]heoretically all possible independent variables are controlled...In other words, the claims of internal validity are rather well satisfied" (p. 331). Moreover, causal interpretations are legitimate if subjects are randomly assigned (Bochner & Fitzpatrick, 1980).

### **Procedure**

The data were collected during the first half of the 1986-87 school year--the week of September 22-26, 1986. Using the schools' lists of students enrolled in their third year of high school, the names were assigned to four groups using a table of random numbers as Kerlinger (1973)

suggests. The treatment was also randomly assigned to the four groups.

Four experimenters were rotated across conditions for each of the three days so that no one same condition had the same experimenter more than once in order to control for an interaction between the experimenter and the treatment. The gender of the experimenters was held constant to avoid interaction effects between the gender of the experimenter and the treatment condition. The experimenters were four undergraduate females enrolled in the Methods course at the Sacred Heart University in Santurce, Puerto Rico. They were trained the week before data collection to insure sameness in handling the experimental conditions.

On the first class period of the same day of the experiment, students were informed to which room they should report for the class period authorized by the high school principals for the experiment. Students were only told that they had a special activity during that class period. Four rooms were equipped with television sets and VHS-video cassette recorders (VCRs). Rental of the equipment was arranged with a local rental company, Island Wide Rent-All, at a daily cost of \$8 for a 19" color television set and \$20 for a VHS-VCR. The same equipment was used in all schools to control for instrumentation effects.

All conditions were run at approximately the same time of the day (class periods starting between 9 and 10 a.m. and before their recess time) to control for internal validity

problems produced by the internal states of subjects, particularly, hunger.

When the students arrived at the designated rooms, they were informed that the purpose of the activity was to get their reactions to the idea of inserting vignettes similar to the ones they were going to see in the local television programming. At the end of the program, subjects were asked to complete a questionnaire. Students were debriefed after the questionnaires had been turned in.

### **Stimulus Material**

The four groups viewed a 17-minute videotape in Spanish interrupted twice for commercials. The program content was composed of seven vignettes videotaped from the Spanish International Network (SIN). Four commercials were inserted at each of the two interruptions.

Several reasons motivated the decision to use these vignettes instead of an intact program. Even though Puerto Rico does not receive the SIN signal, most of the programs have been obtained by other stations. SIN programs not transmitted in Puerto Rico were dismissed for one or more of the following reasons: (1) Food references, (2) Target audience--programs directed at children or at adults (some had sexual references which were considered inappropriate for this study), (3) Extremely low quality of production--knowing the quality of programming to which Puerto Ricans are accustomed, showing such a poor program

would most likely create a negative attitude in the subjects, defeating the purpose of the study; (4) Excessive length of the program. This study was limited to 45 minutes to meet the average length of a class period and comply with requirements made by school principals. Selecting an intact half-hour program would have left too little time for the posttest. Besides, attempts were unsuccessful to get a short documentary or program in Spanish from other sources. The search included WKAR-TV, Instructional Media Center, Cable Television of Lansing (in Spanish, they only had religious programs), Department of Romance and Classical Languages at MSU, Latin American Studies Center at MSU, Committee on Education in Latin America (CELA), Sacred Heart University in Puerto Rico, and other Latin Americans at MSU.

After this extensive search, the vignettes appeared to be the most appropriate fillers for the commercials. Cable TV of Greater San Juan confirmed that the vignettes were not transmitted in Puerto Rico through Galavision which is a paid channel affiliated to SIN. Even if subjects had seen them, for example in the Dominican Republic where SIN programming is received, the instructions preceding the treatment were to get their opinions regarding their liking to see vignettes inserted in the regular programming of local channels.

The vignettes were approximately one- to two-minute accounts about historical events (Cronicas del s. XX-- "Chronicles of the 20th century") or about Hispanic

personalities (Lo Nuestro). Two chronicles were selected from SIN; these were: (1) man's adventures on the moon; (2) a chronology about Elvis Presley and his impact on music genres.

Five Lo Nuestro vignettes were selected: (1) Biblioteca del Congreso--brief account on the Hispanic Division at the Library of Congress; (2) Carlos Fuentes--a Mexican fiction writer; this account incorporates his work in a trend that sees the emergence of one big Latin American novel; (3) Adolfo Perez Esquivel--interview with the winner of the Nobel Peace Prize, and he recounts his peace crusades; (4) Rita Moreno--an interview intertwined with a brief historical account of her career as a multifaceted Puerto Rican performer in American show business; (5) Roberto Clemente--a chronological account of the life and successes of this famous Puerto Rican major league baseball player who died in a plane crash en route to Nicaragua.

The structure of the videotapes was as follows:

<u>Length</u>	<u>Segment</u>
1:53	Lo Nuestro--Congress Library (Hispanic Div.)
1:54	Chronicles of the 20th century--The Moon
2:04	Lo Nuestro--Carlos Fuentes (writer)
2 mins.	Commercials
2:00	Lo Nuestro--Adolfo Perez Esquivel (peace)
2:00	Chronicles of the 20th century--Elvis Presley
2:00	Lo Nuestro--Rita Moreno (performer)
2 mins.	Commercials
<u>1:00</u>	Lo Nuestro--Roberto Clemente (baseball)
17 mins. approx.	

Because SIN has very few food commercials, advertising agencies in Puerto Rico were contacted to obtain food commercials that had not been aired for at least one year. Commercials were received from McCann-Erickson; Israel Rodriguez & Partners, Inc.; Lopito, Ileana & Howie; Publish Records Service; and from La Industria Lechera de Puerto Rico (milk industry that had switched to in-house advertising). Three of the four nonfood commercials were videotaped from SIN; the other was obtained from an advertising agency. The problem with videotaping a last nonfood commercial from SIN was that most commercials were 10-15 seconds in length, too short to meet the 30-second length that would make it comparable to the rest of the commercials.

The four commercials for low-nutrition foods were for Coca-Cola, Disco snack cookies, Hershey chocolates, and Mon Cheri chocolates. The four commercials for pro-nutrition foods were for Kraft cheese singles, Lotus juices, Milk, and Pan Pepin (bread). The four nonfood commercials were for Crest toothpaste, Ivory soap, Sutton musk deodorant, and Zest soap. All commercials showed models consuming the products based on the previous evidence supporting social learning theory. All the commercials had original Spanish audio; none of the commercials were dubbed. Valencia (1984) recommends that "Spanish translation of marketing campaigns is a necessary step for effectively reaching all Hispanic audiences" (p. 20).



Even though commercials were for existing products and brands, the food commercials had not been on the air for at least a year, and most of the nonfood commercials (except for Sutton musk) were only transmitted on SIN. This took care of recent exposure to the commercials where teenagers may have repetitively seen a commercial. The issue of prior learning from those commercials or from similar commercials for the same products is unavoidable because individuals are exposed to television commercials since very early in life. However, randomization should have made the groups comparable at the outset avoiding any systematic effect; differences between the groups should be a consequence of the stimulus material.

The testing positions of the commercials in each condition were randomly assigned using a Table of Random numbers (Kerlinger, 1973). The end results were as follows:

<b><u>Commercial Interruption</u></b>	<b><u>Condition</u></b>
	<b><u>Treatment 1:</u></b> Low-Nutrition Foods
1	Disco-Mon Cheri-Coke-Hersheys
2	Mon Cheri-Coke-Hersheys-Disco
	<b><u>Treatment 2:</u></b> Pro-Nutrition Foods
1	Lotus-Pan Pepin-Kraft cheese-Milk
2	Pan Pepin-Kraft cheese-Milk-Lotus
	<b><u>Treatment 3:</u></b> Low- and Pro-Nutrition Foods
1	Hersheys-Milk-Pan Pepin-Coke
2	Milk-Hersheys-Coke-Pan Pepin
	<b><u>Control:</u></b> Nonfood commercials
1	Ivory-Sutton musk-Zest-Crest
2	Sutton musk-Ivory-Crest-Zest

Previous research using commercials as the treatment usually insert them twice within a program. This amount of exposure is sufficient based on the wearout effect of advertising and the fact that this effect is generally more pronounced in the laboratory setting (Axelrod, 1980; Cacioppo & Petty, 1985; Comstock, et al., 1978). Wearout refers to the "progressive attrition of memorability and communications effectiveness" (Bogart & Lehman, 1983). Experimental and field research suggests that learning increases "after the second exposure to the message, but the

rate of increase becomes less and less with each subsequent exposure" (Comstock, et al., 1978, p. 370).

The other important issue relates to production features of the commercials. Production features constitute a major confounding variable in this study. Large budgets are generally allocated to low-nutrition foods, and smaller budgets to pro-nutrition foods. Jeffrey, McLellarn, and Fox (1982) use this rationale of differences in budgets and production quality to explain failure in finding effect changes produced by pro-nutrition advertising. A review of nine studies on nutrition education and television, where the population of interest was children, calls attention to the effect of differences in quality of production between low- and pro-nutrition food commercials (Scammon & Christopher, 1981). More specifically, Scammon and Christopher (1981) indicate that it is "crucial that experimental stimuli be of comparable creative and technical quality in order to control the effect of this variable on the outcome of the study" (p. 33).

There are several ways to control for these confounding production effects. The method used in this study was to freeze the commercials scene by scene and edit them with their original audio. Research comparing filmed storyboards and commercials have yielded comparable results on measures such as interest in buying or trying a brand, if the art work and the soundtracks are of reasonable high quality (Schlinger & Green, 1980). Within the past year, this has

also become a customary practice by advertising agencies in Puerto Rico to improve their services to their clients (Wagner, 1986).

Since advertising research suggests the use of storyboards to test commercials before engaging in production costs (Lipstein & Neelankavil, 1984; Schlinger & Green, 1980), Forsberg Advertising was contracted for \$945, as professionals, to retrogress the 12 commercials to their storyboard format. They would digitize all the scenes using a Macintosh, add color to the images, and edit them onto a 3/4" videotape synchronized with their original soundtrack. However, this advertising agency delivered a VHS videotape of substandard quality, not suitable for the purpose of this research. There was only a week left before the data collection trip to Puerto Rico (a postponement would have meant additional hundreds of dollars in losses). The freezing-frame method was a feasible (\$413.91), fast, and high-quality alternative that bypassed the art work involved in storyboards. The final effect was similar to filmed storyboards, without the art. The important point is that the twelve commercials had the same technical quality, untangling the stimulus material from attitudes towards the commercials, food preferences, and behavioral intentions. This standardization served as a control for special visual effects, zooms, cuts, physical activity, action, among other production features.

**Variables**

A self-report instrument assessed (1) antecedent variables: demographics (age, gender, money available); (2) control variables: general television and advertising exposure; sources of food influence; (3) outcome variables: food preferences; food consumption intentions and food purchasing intentions as the two aspects of behavioral intentions; (4) mediating variable: attitudes towards television food commercials; (5) interaction variable: Bogardus' social-distance scale; (6) several questions about reactions to the vignettes. Answering the questionnaire took an average of 20 minutes.

A copy of the instrument in English is attached as Appendix A highlighting at each point the variables being operationalized. However, the instrument was administered in Spanish because not all Puerto Ricans are bilingual. The author's translation was compared to two additional translations to check interpretation and comprehension of questions. Appendix B provides the Spanish version used.

Subjects' names were not requested, to encourage disclosure of information about money available. A pilot study conducted in April, which asked for their names, failed to assess this information. The exploratory study conducted in December 1984, however, gathered this information since students were not asked to reveal their identity.

There were four sets of the instrument, each with a different color, to facilitate recognition of each condition (green for Treatment One--low nutrition; blue for Treatment Two--pro nutrition; salmon for Treatment Three--the combination group of low- and pro-nutrition; and yellow for the control group). The only difference in the questionnaires was in assessing attitudes towards the specific commercials viewed.

### **Antecedent and Control Variables**

Several indices were constructed from the group of antecedent variables to be used as controls in the analyses. An index of general exposure to television commercials was obtained by asking subjects, on a five-point scale ranging from never to very often, how often they performed certain behaviors when they are watching television and commercials come on. The scale had a Cronbach reliability coefficient of .752 and consisted of the following six items: How often do you... watch the commercials; switch channels; leave the room, and do not listen to commercials; leave the room, but listen to commercials; do other activities in the room, but do not watch the commercials; do other activities in the room, but do not listen to the commercials.

An index of general television exposure was obtained by multiplying the schoolday exposure by five and adding the Saturday and Sunday exposure. Subjects were asked how many hours they usually watch television during the morning, afternoon and evening of a regular school day, Saturday and

Sunday. Subjects watch an average of 31 hours and 40 minutes during a seven-day week. In the exploratory study, it was found that subjects watch an average of 34 hours per seven-day week (Del Toro, 1986; Del Toro & Greenberg, 1987).

Another additive index was constructed for the amount of money available. Subjects were asked for their monthly income derived from allowances, work, gifts of money, and other sources. Their responses were added to estimate their income, which is an average of \$68.49 per month.

Sources of food influence were measured by asking subjects, on a seven-point scale from no influence to a lot of influence, how much influence in what they eat do they think several sources have. The sources provided were: father, mother, siblings, school, friends, newspaper, magazines, books, TV food commercials. These sources were expected to cluster in two factors: one for interpersonal influences and one for mass media influences. A factor analysis with varimax rotation was conducted confirming the expectations. However, the reliabilities for these two scales were extremely low. These two scales were going to be used as controls, but due to their unreliability they were dropped off from further analyses. Table 1 provides the factor loadings for the two factors as well as the Cronbach alphas.

Table 1. Factor Loadings and Reliabilities  
for Sources of Food Influence

<u>FACTOR</u>	<u>FACTOR LOADINGS</u>	<u>PERCENT OF VARIANCE</u>	<u>ALPHA</u>
<u>Interpersonal Sources</u>		72%	.274
Father	.591		
Mother	.596		
Siblings	.641		
School	.533		
Friends	.516		
<u>Mass Media Sources</u>		28%	-.000
Newspapers	.718		
Magazines	.909		
Books	.645		
TV Food Commercials	.424		

### Outcome Variables

Several summated indices were also constructed for the outcome variables--food preferences and behavioral intentions (food consumption intentions and food purchasing intentions) based on the hypothesized differences for: (1) foods exposed to and foods not exposed to (H1, H3, and H5); (2) foods of similar and dissimilar nutritional levels (H2, H4, and H6); (3) advertised low- and pro-nutrition foods of US origin (H7). Using a seven-point scale from 1=Would not prefer to 7=Would prefer, subjects were asked about their food preferences: "Suppose you could have a snack right now. Indicate which foods from the following list you would prefer to have." Using a seven-point scale from 1=Unlikely to 7=Likely, subjects were asked how likely they were to consume or to buy during the next week the products listed.



Since each hypothesis tests pairs of outcome variables, correlations among these pairs, adjusting for the treatment variable, were conducted to examine the amount of covariation among the outcome variables (see Table 3). Multivariate analyses were appropriate to account for the correlated outcome variables.

### **Exposed vs. Not Exposed**

Because the dependent variables for foods exposed to and for foods not exposed to differed for each group condition, "DO IF" logical statements were created to produce the two dependent variables for each of the three outcome variables. For example, for food preferences, there are two components: preferences for foods exposed to and preferences for foods not exposed to; likewise, for consumption intentions and for purchasing intentions.

Each treatment condition had specific food commercials to which they were exposed and different foods to which they were not exposed. Subjects in the low-nutrition group were exposed to commercials for Coca-Cola, Disco snack cookies, Hershey chocolates, and Mon Cheri Chocolates; they were not exposed to pro-nutrition food commercials for Kraft cheese, Lotus juices, milk, and Pan Pepin (bread); neither were they exposed to five similar low-nutrition foods nor to six similar pro-nutrition foods. The five foods from similar low-nutrition level were: other soft drinks, any candy, other chocolates, chips/Fritos/etc., other snack crackers. The six foods from similar pro-nutrition level were: ice

cream, other cheeses, any fruit, any vegetable, other juices, other breads. The inclusion of food items in a low- or pro-nutrition level was based on recommendations of nutritionists regarding which snack items can provide essential nutrients to growing bodies (Kreutler, 1980; McNutt & McNutt, 1978; Sharaga, 1974). Suggested snacks include fruits and juices, cheese, ice cream, milk, yogurt, peanut butter, raw vegetables, and grains. Among the snacks to avoid or limit are chips, pies, cookies, cakes, doughnuts, candy, and soft drinks.

The pro-nutrition group was exposed to four pro-nutrition food commercials (Kraft, Lotus, milk, and Pan Pepin), but they were not exposed to the four low-nutrition foods (Coca-Cola, Disco, Hersheys, and Mon Cheri), nor to the five similar low-nutrition foods, nor to the six similar pro-nutrition foods.

The combination group was exposed to two low-nutrition food commercials (Coca-Cola and Hersheys) and to two pro-nutrition food commercials (milk and Pan Pepin); they were not exposed to commercials for Disco snack cookies, Mon Cheri chocolates, Kraft cheese, Lotus juices, the five similar low-nutrition foods, and the six similar pro-nutrition foods.

The "DO IF" facility allowed conditional execution of a series of data transformations such that the dependent variable "Preferences for foods exposed to" for Group 1 refers only to preferences for the four low-nutrition foods

seen; likewise, for the pro-nutrition (Group 2) and the combination (Group 3) groups. A similar interpretation follows for the other dependent variable, "Preferences for foods not exposed to." The same logical procedure was followed to construct the other two outcome variables: food consumption intentions and food purchasing intentions. Table 2 shows the structure of the outcome variables, and Table 3 presents their Cronbach alphas, and correlation coefficients. The correlation coefficients under each treatment condition represent the correlation between the two dependent variables pertaining to each Outcome Variable for that particular treatment.

Table 2. Structure of the Outcome Variables  
(Exposed vs. Not Exposed)

FOOD CATEGORIES	FOOD PREFERENCES		CONSUMPTION INTENTIONS		PURCHASING INTENTIONS	
	<u>Exp.</u>	<u>~Exp.</u>	<u>Exp.</u>	<u>~Exp.</u>	<u>Exp.</u>	<u>~Exp.</u>
<u>Low-Nutr.</u> (n=4)	1	2	1	2	1	2
Coca-Cola	3		3		3	
Hershey	3		3		3	
Mon Cheri		3		3		3
Disco cookies		3		3		3
<hr/>						
<u>Pro-Nutr.</u> (n=4)	2	1	2	1	2	1
Kraft cheese		3		3		3
Lotus juice		3		3		3
Milk	3		3		3	
Pan Pepin (bread)	3		3		3	
<hr/>						
<u>Similar Low-Nutr.</u> (n=5)		1, 2, 3		1, 2, 3		1, 2, 3
Soft drinks						
Candy						
Chocolates						
Chips/Fritos						
Snack cookies						
<hr/>						
<u>Similar Pro-Nutr.</u> (n=6)		1, 2, 3		1, 2, 3		1, 2, 3
Ice cream						
Cheese						
Fruits						
Vegetables						
Juices						
Breads						

NOTE: The numbers refer to treatment conditions: 1=Low-nutrition group, 2=Pro-nutrition group, 3=Combination group. A number in the row of a food-category label means that all food items under that label are applicable to the particular condition. A number in the row of individual food items indicates that only those food items are relevant for the particular treatment condition.

Exp. means foods exposed to.  
~Exp. means foods not exposed to.

Table 3. Reliabilities and Correlations for Outcome Variables (Exposed vs. Not Exposed)

OUTCOME VARIABLES	<u>Treatment Conditions</u>					
	1= <u>Low-Nutr.</u> (n=59)		2= <u>Pro-Nutr.</u> (n=56)		3= <u>Combo</u> (n=60)	
	<u>α</u>	<u>r</u>	<u>α</u>	<u>r</u>	<u>α</u>	<u>r</u>
FOOD PREFERENCES		.21		.31*		.38*
Exposed to	.76		.61		.67	
Not exposed to	.65		.63		.72	
CONSUMPTION INTENTIONS		-.03		.39*		.33*
Exposed to	.84		.78		.67	
Not exposed to	.64		.67		.89	
PURCHASING INTENTIONS		.31*		.55*		.47*
Exposed to	.84		.80		.89	
Not exposed to	.73		.72		.79	

\*p < .05

NOTE: R is the overall correlation coefficient between the two dependent variables pertaining to each Outcome Variable while controlling for group membership. The "r" represents the correlation between the two dependent variables pertaining to each Outcome Variable for that particular treatment.

#### Similar vs. Dissimilar Nutritional Levels

"DO IF" statements were also used to construct the outcome variables food preferences, consumption intentions, and purchasing intentions for foods of similar and dissimilar nutritional levels to the ads seen. Those exposed to low-nutrition foods also expressed their preference for five similar low-nutrition foods; those exposed to pro-nutrition food commercials also expressed their preference for six similar pro-nutrition foods. The foods not exposed to are of the opposite nutritional level

(dissimilar)--ten for the low-nutrition group, and nine for the pro-nutrition group; likewise, for consumption intentions and purchasing intentions (see Table 4). Table 5 shows the reliabilities and correlation coefficients for these variables.

Table 4. Structure of the Outcome Variables  
(Similar vs. Dissimilar Nutritional Levels)

FOOD CATEGORIES	FOOD PREFERENCES		CONSUMPTION INTENTIONS		PURCHASING INTENTIONS	
	<u>Sim.</u>	<u>Dis.</u>	<u>Sim.</u>	<u>Dis.</u>	<u>Sim.</u>	<u>Dis.</u>
<u>Low-Nutr.</u> (n=4)		2		2		2
Coca-Cola						
Hershey						
Mon Cheri						
Disco cookies						
<hr/>						
<u>Pro-Nutr.</u> (n=4)		1		1		1
Kraft cheese						
Lotus juice						
Milk						
Pan Pepin (bread)						
<hr/>						
<u>Similar Low-Nutr.</u> (n=5)	1	2	1	2	1	2
Soft drinks						
Candy						
Chocolates						
Chips/Fritos						
Snack cookies						
<hr/>						
<u>Similar Pro-Nutr.</u> (n=6)	2	1	2	1	2	1
Ice cream						
Cheese						
Fruits						
Vegetables						
Juices						
Breads						

NOTE: The numbers refer to treatment conditions: 1=Low-nutrition group, and 2=Pro-nutrition group. A number in the row of a food-category label means that all food items under that label are applicable to the particular condition.

Sim. means foods of similar nutritional level.  
Dis. means foods that are dissimilar, that is,  
foods of the opposite nutritional level.

Table 5. Reliabilities and Correlations for Outcome Variables (Similar vs. Dissimilar Nutr'l Levels)

<u>Treatment Conditions</u>					
OUTCOME VARIABLES	1= <u>Low-Nutr.</u> (n=59)		2= <u>Pro-Nutr.</u> (n=56)		R
	<u>α</u>	<u>r</u>	<u>α</u>	<u>r</u>	
-----					
FOOD PREFERENCES		.15		.14	.17*
Similar	.62		.67		
Dissimilar	.65		.69		
-----					
CONSUMPTION INTENTIONS		.15		.32*	-.12
Similar	.73		.61		
Dissimilar	.69		.68		
-----					
PURCHASING INTENTIONS		.17		.28*	.22*
Similar	.71		.65		
Dissimilar	.69		.68		

\*p < .05

NOTE: R is the overall correlation coefficient between the two dependent variables pertaining to each Outcome Variable while controlling for group membership. The "r" represents the correlation between the two dependent variables pertaining to each Outcome Variable for that particular treatment.

#### **Advertised US vs. Non-US Foods**

Of the commercials used in this study, two of the low-nutrition foods (Coca-Cola and Hershey chocolates) and one of the pro-nutrition foods (Kraft cheese) are of US origin. The low-nutrition and combination groups viewed these two low-nutrition food commercials. Only the pro-nutrition group saw the Kraft cheese commercial. Refer to Table 6 for the structure of the outcome variables. Each outcome variable (food preferences, consumption intentions, and purchasing intentions) had two forms: exposure to foods of US origin, and exposure to foods of non-US origin.



Table 6. Structure of the Outcome Variables  
(Advertised US vs. Non-US Foods)

FOOD CATEGORIES	FOOD PREFERENCES		CONSUMPTION INTENTIONS		PURCHASING INTENTIONS	
	US	~US	US	~US	US	~US
<u>Low-Nutr.</u> (n=4)						
Coca-Cola	1,3		1,3		1,3	
Hershey	1,3		1,3		1,3	
Mon Cheri		1,3		1,3		1,3
Disco cookies		1,3		1,3		1,3
-----						
<u>Pro-Nutr.</u> (n=4)						
Kraft cheese	2		2		2	
Lotus juice		2		2		2
Milk		2		2		2
Pan Pepin (bread)		2		2		2
-----						

NOTE: The numbers refer to treatment conditions: 1=Low-nutrition group, 2=Pro-nutrition group, 3=Combination group. A number in the row of individual food items indicates that only those food items are relevant for the particular treatment condition.

US means foods of US origin.  
~US means foods not of US origin.

Table 7 presents the reliabilities and correlation coefficients for these variables. Because the food preference, consumption intention, and purchasing intention of the pro-nutrition food of US origin (Kraft cheese) has only one item, its mean is presented on Table 7. Because the food preferences, consumption intentions, and purchasing intentions of the low-nutrition and combination groups for foods of US and non-US origin are only two items each, Table 7 presents its Pearson correlation coefficient instead of a Cronbach alpha.

Table 7. Reliabilities and Correlations for Outcome Variables (Advertised US vs. Non-US Foods)

<u>Treatment Conditions</u>						
OUTCOME VARIABLES	1= <u>Low-Nutr.</u> (n=59)		2= <u>Pro-Nutr.</u> (n=56)	3= <u>Combo</u> (n=60)		R
	<u>r</u>	<u>r</u>	<u>g</u>	<u>r</u>	<u>r</u>	
-----						
FOOD PREFERENCES		.27*				
US Origin	.05		r= .42*		.30*	.25*
Non-US Origin	.31		M=3.63	.13		
			.74	.17		
-----						
CONSUMPTION INTENTIONS		.25*				
US Origin	.18		r= .46*		.14	.33*
Non-US Origin	.45*		M=5.27	.08		
			.63	.06		
-----						
PURCHASING INTENTIONS		.36*				
US Origin	.49*		r= .59*		.26*	.36*
Non-US Origin	.37*		M=4.55	.33*		
			.61	.09		
-----						

\*p < .05

NOTE: R is the overall correlation coefficient between the two dependent variables pertaining to each Outcome Variable while controlling for group membership.

### Mediating Variable

Several scales have been constructed in the area of advertising to tap people's attitudes towards advertising (Aaker & Bruzzone, 1981; Leavitt, 1970; Mehrotra, Van Auken, & Lonial, 1981; Schlinger, 1979; Wells, 1964; Wells, Leavitt, & McConville, 1971). After a careful examination of these scales, this study used Aaker and Bruzzone's with Wells, Leavitt, & McConville's instructions to measure attitudes towards television food commercials. Aaker and Bruzzone's scale has four factors (entertaining, personal relevance, dislike, and warm); it is based on Wells,

Leavitt, and McConville's scale; and it also overlaps with Schlinger's scale. Aaker and Bruzzone (1981) examined viewers' responses to 524 prime-time commercials and factor analyzed them using varimax rotation. The scale provides an assessment of consumers' perceptions of the execution of the commercials which is tightly tied in to the emotional appeals. This is particularly suitable for this study, because food commercials are especially rich in emotional appeals. Aaker and Bruzzone (1981) asked their respondents "to check any of 20 alphabetically listed adjectives that they feel describe the commercial. On the average, over two adjectives are checked by each respondent" (p. 16). However, a better assessment of consumers' attitudes could be obtained if they were asked to "tell how well you think each of these [adjectives] describes the ad you have just seen by putting a number to the [left] of the word. If you feel the word fits

extremely well.....put a 5  
 very well.....put a 4  
 fairly well.....put a 3  
 not very well.....put a 2  
 not well at all....put a 1

on the line to the [left] of the word" (Wells, Leavitt, & McConville, 1971, p. 14).

For this investigation, a confirmatory factor analysis using varimax rotation was conducted for each scale as well as reliability assessments using Chronbach's alpha. The adjectives for each scale with their translation, factor loadings, and alpha coefficients are shown in Table 8.

Table 8. Confirmatory Factor Analysis and Reliabilities for Attitudes Towards Food Commercials

<u>FACTOR</u>	<u>FACTOR LOADINGS</u>	<u>ALPHA</u>
<u>Entertaining</u>		.986
Clever (Ingenioso)	.819	
Imaginative (Imaginativo)	.748	
Amusing (Entretenido)	.852	
Original (Original)	.784	
* Uninteresting (Sin interes)	.585	
Lively (Animado)	.733	
* Dull (Aburrido)	.684	
* Easy to Forget (Facil de olvidar)	.523	
<u>Personal Relevance</u>		.966
Worth remembering (Vale la pena recordar)	.780	
Convincing (Convincente)	.875	
Effective (Efectivo)	.866	
Informative (Informativo)	.603	
Interesting (Interesante)	.829	
<u>Dislike</u>		.984
Irritating (Irritante)	.793	
Silly (Tonto)	.818	
Pointless (Sin sentido, absurdo)	.912	
Phony (Engañoso)	.593	
<u>Warm</u>		.922
Appealing (Atrayente)	.860	
Gentle (Con tacto)	.844	
Well done (Bien hecho)	.843	

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\* Items were reversed before constructing the index.

Correlations exist among the factors even after partialling out the effects of the treatment variable (see Table 9). These intercorrelations were taken into account by using multivariate procedures.

Table 9. Partial Correlations Between Attitudes Towards  
Commercials Controlling for Treatment Condition

	Entertaining	Personal Relevance	Dislike	Warm
Entertaining	1.000	.805*	-.665*	.814*
Personal Rel.		1.000	-.517*	.813*
Dislike			1.000	-.543*
Warm				1.000

-----  
\*p < .05

### Interaction Variable

The Bogardus' social distance scale was also constructed. Subjects were instructed to give their first feeling reactions to seven statements concerning Americans as a group based on their stereotypical image of Americans. The items asked if they would accept or not Americans to close kinship by marriage, to their club as personal chums, to their street as neighbors, as students in their school, to citizenship in their country, as visitors only to their country, or if they would exclude Americans from their country. The first six items represent group memberships.

Acceptance to one of these groupings was coded as one; unacceptance was coded as zero. The average social contact range, that is, the number of groupings to which Americans were admitted, was 4.01 groups of a total six.

According to Bogardus (1924), the seven items represent a gradation in social contact distance. To determine the social contact distance, the items were recoded such that one denoted no admittance to a group, whereas zero denoted admittance to a group. Therefore, the closest social distance or the best index is represented by a number close to zero, which means that no groups were removed. The greatest social distance or the worst index is represented by a number close to six, which means that Americans were not admitted to any of the six groups. The average social contact distance was 1.99 of a total six, which represents closeness because it is a relatively short contact distance.

Miller (1977) indicates that repeated tests on the Bogardus' social distance scale report a split-half reliability coefficient of .90 or higher. The Guttman split-half reliability coefficient in this study was .89.

### **Human Subject Protection**

Permission was obtained from high school principals to conduct the experiment during class time. Students were informed of the purpose of the study and were asked for their cooperation. They were told that participation was not obligatory, but participation was encouraged. Anyone was

free to decide not to participate. Subjects were guaranteed confidentiality and anonymity. After questionnaires were collected, subjects in each group were debriefed by their experimenter.

The stimulus materials for the experimental conditions were drawn from regular television programming. Therefore, the content of the television program and commercials was the same as what anyone might see at home.

### **Statistical Analyses**

The data were analyzed using the subroutines of the Statistical Package for the Social Sciences (SPSS). Statistical procedures included measures of central tendency, correlations, factor analyses, reliability computations, group comparisons, multivariate analysis of variance, and multivariate analysis of covariance. The means in the experimental design were compared using a priori contrasts.

The control variables were tested using analysis of variance to verify if there were significant differences between the groups. Table 10 shows that there were no significant differences among the groups and that randomization made them comparable at the outset. As it had been expected, the groups were homogeneous with respect to general television and advertising exposure, sources of food influence, age, and income.

Table 10. Control Variables by Treatment Condition

<u>Variable</u>	<u>Treatment Cconditions</u>				<u>F</u>
	<u>Low-Nutr</u> (n=59)	<u>Pro-Nutr</u> (n=56)	<u>Combination</u> (n=60)	<u>Control</u> (n=59)	
<u>General TV exposure</u> (in minutes)	1891.86	1757.59	1863.00	2122.03	1.64
<u>Exposure to TV commercials</u> (5-point scale from never to very often)	3.33	3.28	3.33	3.40	.31
<u>Sources of Food Influence</u> (7-point scales from no infl. to a lot of infl.)					
Interpersonal	3.35	3.31	3.58	3.36	.44
Mass Media	2.64	2.79	3.04	2.52	1.53
<u>Age</u>	15.83	15.71	15.75	15.78	.49
<u>Income</u> (per month)	59.81	83.02	74.93	56.83	1.96

The correlations between the control variables and group membership were almost nil and nonsignificant: with general TV exposure ( $r=.097$ ); exposure to TV commercials ( $r=.054$ ); interpersonal sources of food influence ( $r=.025$ ); mass media sources of food influence ( $r=-.001$ ); age ( $r=-.026$ ); and with income ( $r=-.027$ ).

However, correlations between the control variables and the mediating and outcome variables showed several low but significant associations (see Table 11). As previously indicated, the two indices for sources of food influence had extremely low reliabilities.



Table 11. Correlations Between Control Variables and Mediating and Outcome Variables

MEDIATING VARIABLES	Food Influence					
	Weekly TV Exp.	Commercial Exposure	Interp.	Mass Media	Income	Age
<u>Social Distance</u>	-.13*	-.08	-.03	.05	-.08	-.07
<u>Attitudes towards TV food commercials</u>						
Entertaining	-.02	-.17*	.10	.06	.06	-.05
Personal						
Relevance	.01	-.10	.20*	.11*	.07	-.01
Dislike	.06	.12*	-.01	-.10	-.01	.04
Warm	-.00	-.13*	.13*	.06	.03	-.05
OUTCOME VARIABLES						
<u>Food Preferences</u>						
Exposed	-.00	.11	.10	.12	-.07	.01
Not exposed	-.08	.14*	.17*	.12	-.08	-.12
Similar	.06	.16*	.21*	.12	.20*	.01
Opposite	-.12	.01	.03	.07	-.04	-.07
US Origin	.04	.14*	.11	.08	-.15*	-.02
Non-US Origin	-.01	.07	.02	.03	-.03	-.05
<u>Consumption Intentions</u>						
Exposed	-.07	.08	.09	.19*	.10	-.05
Not exposed	.01	.14*	.19*	.09	-.06	-.15*
Similar	.08	.22*	.20*	.06	-.06	-.05
Opposite	.05	.04	.04	.03	.07	-.16*
US Origin	.02	.11	.05	.10	.02	-.11
Non-US Origin	-.10	-.02	-.01	.02	.16*	-.01
<u>Purchasing Intentions</u>						
Exposed	-.01	.05	.06	.27*	.03	.04
Not exposed	.07	.13	.14*	.18*	-.08	-.13
Similar	.06	.20*	.20*	.17*	.10	.06
Opposite	.08	-.01	-.02	.03	-.05	-.22*
US Origin	.06	.11	.09	.20*	-.01	.05
Non-US Origin	-.04	.00	-.06	.08	.09	.03

\*p &lt; .05

Variability due to experimental error was controlled through direct and statistical methods. In this study, direct controls included time of day, grade level, same equipment, standardizing commercials, random assignment of testing positions for commercials, same gender for experimenters, and careful assignment of experimenters to the four conditions to avoid having an experimenter be more than once in a treatment condition. Statistical control was used to remove potential sources of bias in the experiment due to measured variables discussed in the section on Antecedent Variables, and thus refine the estimates of experimental error. These variables were used as covariates to eliminate error variation in the outcome variables that cannot be controlled through experimental manipulations.

Data analysis included multivariate analysis of covariance to test the adolescent consumer socialization model proposed in this study (see Figure 2, page 25). The seven hypotheses were tested using multivariate analysis of variance accounting for the intercorrelations among the outcome variables. The subhypotheses for the first six hypotheses were tested using a priori contrasts.

## CHAPTER IV

### RESULTS

This chapter has two main components: (1) hypothesis testing, and (2) test of the model on the Consumer Socialization of Teenagers in Puerto Rico in the Area of Foods (Figure 2, page 25). An alpha level of .05 was set prior to data analysis. The structure of the outcome variables presented in Table 2 (page 60) applies to H1, H3, and H5. The structure of the outcome variables presented in Table 4 (page 63) applies to H2, H4, and H6. The structure of the outcome variables for H7 appears on Table 6 (page 65).

#### Hypothesis Testing

H1: Teenagers exposed to televised commercials for specific foods will have more **preference** for those foods **exposed** to than for foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.

Multivariate analyses of variance for foods exposed to and for foods not exposed to were run to determine if there were any significant differences between the three groups that saw food commercials (see Table 12).

Table 12. Food Preferences by Treatment Condition

	<u>Treatment Conditions</u>			<u>F</u>
	<u>Low-Nutr.</u> (n=58)	<u>Pro-Nutr.</u> (n=56)	<u>Combination</u> (n=59)	
Foods exposed to	4.50	4.02	4.53	2.50
Foods not exposed to	4.16	4.56a	4.05a	4.21*
t-value	1.72	2.43*	2.32*	.80

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 \*p < .05

NOTE: Same lower-case letters indicate that groups are significantly different.  
 -----

Comparison for the total sample regarding preferences for foods exposed to and foods not exposed to was not significant ( $t=.80$ ,  $p>.05$ ). However, there were some significant relationships when the analysis was broken down by treatment conditions. Both the low-nutrition and the combination groups had more preference for the foods to which they were exposed than for foods for which no ads were seen; however, this greater preference was significantly different only for the combination group. Of the foods seen by the combination group, there was more preference for the low-nutrition foods seen (Mean=5.03) than for low-nutrition foods not seen in ads ( $M=3.72$ ); there was less preference for the pro-nutrition foods seen ( $M=4.03$ ) than for those not seen ( $M=4.41$ ). This relationship for the pro-nutrition component of the Combination group was similarly manifested in the Pro-Nutrition group, that is, there was

significantly more preference for foods not seen in the commercials.

Comparisons between the three groups show that the groups do not differ in their preference for foods exposed to yielding a nonsignificant F value. However, the three groups differed significantly regarding foods not exposed to. An a posteriori Scheffe test showed that significant differences exist between the pro-nutrition and combination groups at the .05 level with a 3.5 range value.

Because the second part of H1 refers to a stronger effect among those with more favorable attitudes towards the commercials, the indices for the four attitudinal factors were dichotomized by their medians into more and less favorable attitudes. Table 13 shows the means for each cell.

Table 13. Means of Food Preferences by Strength of Attitudes Towards Commercials

		<u>Treatment Conditions</u>					
		<u>Low-Nutrition</u> (n=59)		<u>Pro-Nutrition</u> (n=56)		<u>Combination</u> (n=60)	
<u>Entertaining:</u>		<u>More</u>	<u>Less</u>	<u>More</u>	<u>Less</u>	<u>More</u>	<u>Less</u>
Exposed		4.75	4.18	4.76	3.54	4.75	4.28
Not exposed		4.17	4.15	4.55	4.56	4.10	4.06
<hr/>							
<u>Personal Relevance:</u>							
Exposed		4.67	4.47	5.64	3.67	4.98	4.45
Not exposed		4.27	4.14	4.62	4.49	4.13	4.07
<hr/>							
<u>Dislike:</u>							
Exposed		4.17	4.91	3.69	4.54	4.29	4.73
Not exposed		4.10	4.16	4.57	4.33	4.28	3.96
<hr/>							
<u>Warm:</u>							
Exposed		4.60	4.43	4.84	3.40	4.62	4.57
Not exposed		4.12	4.22	4.56	4.56	4.04	4.17
<hr/>							

For all group conditions (see Table 13), the more entertaining, the more personal relevance, the less dislike, and the more warmth in the commercials seen, the more preference for foods seen in the ads than for foods not seen in the ads. The means follow the expected directions. Because the hypothesis states a greater preference for foods exposed to than for foods not exposed to, difference scores were constructed reflecting the degree of preference (exposed minus not exposed). The test of these difference scores regarding attitudes towards commercials are presented in Table 14.

Table 14. Difference Scores of Food Preferences by Strength of Attitudes Towards Commercials (Exposed - Not Exposed)

<u>Treatment Conditions</u>												
<u>Low-Nutrition</u> (n=59)				<u>Pro-Nutrition</u> (n=56)				<u>Combination</u> (n=60)				<u>Over- all t</u>
<u>More</u>	<u>Less</u>	<u>t</u>		<u>More</u>	<u>Less</u>	<u>t</u>		<u>More</u>	<u>Less</u>	<u>t</u>		
<u>Entertaining:</u>												
Difference	.58	.03	1.21	.21	-1.02	3.90*		.65	.22	1.19	4.10*	
<u>Personal Relevance:</u>												
Difference	.40	.33	.08	1.02	-.82	3.86*		.85	.38	.69	2.60*	
<u>Dislike:</u>												
Difference	.07	.75	1.62	-.88	.21	1.97*		.01	.77	1.85	3.22*	
<u>Warm:</u>												
Difference	.48	.21	.43	.28	-1.16	3.93*		.58	.40	.11	2.91*	
-----												
*p < .05												

-----  
\*p < .05

Table 14 shows significant relationships for the pro-nutrition group only. The personal relevance factor produced the greatest preference for the pro-nutrition foods seen, the more personal relevance, the more preference for the pro-nutrition foods exposed to. If the pro-nutrition commercials are less entertaining and less warm, there is more preference for foods not exposed to. The more dislike for the pro-nutrition commercials seen, the more preferences for foods not exposed to. Those who had less dislike for the pro-nutrition commercials seen preferred foods exposed

to. For the low-nutrition and combination groups, the relationships were as expected but nonsignificant.

H1 was partially supported. Overall the first part of H1 was supported for the combination group. The low-nutrition group followed the expected direction, but the relationship was not significant. The relationship was reversed for the pro-nutrition group, but when broken down by the attitudinal factors, the personal relevance factor produced more preference for the pro-nutrition foods seen. Therefore, the second part of H1 was supported only in terms of the personal relevance factor regarding the pro-nutrition group. The relationships for the low-nutrition and combination groups followed expectations regarding the attitudinal factors, but none of these relationships were significant.

The following four subhypotheses of H1 predicted comparisons between treatment groups. They were tested using a priori contrasts.

H1a: Teenagers exposed to television food commercials for low-nutrition foods will prefer those foods more than those exposed to pro-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding food preferences for advertised low-nutrition foods: one between the low- and pro-nutrition groups; the other between the low-nutrition group and the control group who watched nonfood commercials. Table 15 shows that none of the



contrasts was significant although the direction of the means was as expected, that is, those exposed to low-nutrition foods had more preference for said foods than those exposed to pro-nutrition or nonfood commercials. Because of lack of significance, H1a was not supported.

Table 15. Contrasts of Food Preferences for  
Advertised Low-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Low-Nutrition vs. Pro-Nutrition	4.50 4.22	1.12
Low-Nutrition vs. Control	4.50 4.37	.55

H1b: Teenagers exposed to television food commercials for pro-nutrition foods will prefer those foods more than those exposed to low-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding food preferences for advertised pro-nutrition foods: one between the pro- and low-nutrition groups; the other between the pro-nutrition group and the control group. As Table 16 shows these contrasts were not significant, and the means were in the reversed direction. The results in Table 16 further establish that exposure to pro-nutrition food commercials does not produce preferences for these types of foods, unless mediated by a favorable attitude towards the commercials.

Table 16. Contrasts of Food Preferences for  
Advertised Pro-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Pro-Nutrition vs. Low-Nutrition	4.02 4.48	1.73
Pro-Nutrition vs. Control	4.48 4.35	1.24

H1c: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have less preference for these types of foods than those solely exposed to either pro- or low-nutrition foods.

This hypothesis suggested one contrast between the combination group and the pro-nutrition group regarding food preferences for advertised pro-nutrition foods. The other contrast was between the combination group and the low-nutrition group regarding food preferences for advertised low-nutrition foods. Neither of the contrasts was significant (see Table 17). However, those exposed solely to low-nutrition foods or to pro-nutrition foods did have more preference for their respective foods than those who were exposed to a combination of nutritional levels. Although the relationships are as hypothesized, H1c is not statistically supported because of nonsignificances.

Table 17. Contrasts of Food Preferences for Advertised  
Low- and Pro-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
<u>Preference for Low-Nutrition Foods</u>		
Combination vs. Low-Nutrition	5.03 5.20	.58
Combination vs. Control	5.03 5.00	.29
-----		
<u>Preference for Pro-Nutrition Foods</u>		
Combination vs. Pro-Nutrition	4.03 4.13	.30
Combination vs. Control	4.03 4.01	1.00
-----		

H1d: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have more preference for these types of foods than those exposed to nonfood commercials.

This hypothesis suggested contrasts between the combination group and the control group regarding food preferences for advertised low-nutrition foods and advertised pro-nutrition foods. The results in Table 17 show that means followed the expected direction. Because the contrasts are not significant, H1d is not supported.

H2: Teenagers exposed to televised commercials for either low- or pro-nutrition foods will have more **preference** for foods of the **similar** nutritional level to the ads seen than for foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.

Those exposed to low-nutrition food commercials also expressed their preference for five similar low-nutrition foods. Those exposed to pro-nutrition food commercials also expressed their preference for six similar pro-nutrition foods (refer to Table 4). The foods not exposed to are of the opposite nutritional level (dissimilar)--nine for the low-nutrition group, and ten for the pro-nutrition group. Table 18 shows the results.

Table 18. Preference for Foods of Similar and Dissimilar Nutritional Levels by Treatment Condition

	<u>Treatment Conditions</u>		<u>t</u>
	<u>Low-Nutrition</u> (n=59)	<u>Pro-Nutrition</u> (n=56)	
Similar	3.75	4.51	3.10*
Dissimilar	4.34	4.56	1.10
<hr/>			
t-value	2.56*	.04	1.85

-----  
\*p < .05

H2 is not supported by these mean relationships. Comparison for the total sample regarding preferences for similar and dissimilar foods was not significant ( $t=1.85$ ,  $p>.05$ ). When broken down by treatment conditions, both groups preferred dissimilar foods, that is, foods of the

opposite nutritional level to the ones seen in the commercials; the low-nutrition group had significantly less preference for foods similar in nutritional value to the ones seen. However, the pro-nutrition group had significantly more preference for foods similar in nutritional value to the ads seen as compared to those who viewed low-nutrition food commercials.

The second part of H2 refers to a stronger effect among those with more favorable attitudes towards the commercials. The four attitudinal factors were dichotomized by their median into more and less favorable attitudes. Table 19 shows the means for each cell.

Table 19. Means of Preferences for Foods of Similar and Dissimilar Nutritional Levels by Strength of Attitudes Towards Commercials

	<u>Treatment Conditions</u>			
	<u>Low-Nutrition</u> (n=59)		<u>Pro-Nutrition</u> (n=56)	
	<u>More</u>	<u>Less</u>	<u>More</u>	<u>Less</u>
<u>Entertaining:</u>				
Similar	3.77	3.73	4.58	4.46
Dissimilar	4.41	4.24	4.49	4.61
-----				
<u>Personal Relevance:</u>				
Similar	3.44	3.81	4.91	4.37
Dissimilar	4.69	4.27	4.48	4.52
-----				
<u>Dislike:</u>				
Similar	3.69	3.82	4.74	4.29
Dissimilar	4.41	4.27	4.47	4.64
-----				
<u>Warm:</u>				
Similar	3.61	3.91	4.50	4.51
Dissimilar	4.35	4.25	4.58	4.54
-----				

The hypothesis states a greater preference for foods of similar nutritional level to the ones seen than for dissimilar foods (foods of the opposite nutritional level). Therefore, difference scores were constructed reflecting the degree of preference (similar minus dissimilar). The test of these difference scores regarding attitudes towards commercials are presented in Table 20.

Table 20. Difference Scores of Preferences for Foods of Similar and Dissimilar Nutritional Levels by Strength of Attitudes Towards Commercials (Similar - Dissimilar)

	<u>Treatment Conditions</u>							
	<u>Low-Nutrition</u>				<u>Pro-Nutrition</u>			<u>Over-</u>
	<u>(n=59)</u>				<u>(n=56)</u>			<u>all</u>
<u>Entertaining:</u>	<u>More</u>	<u>Less</u>	<u>t</u>		<u>More</u>	<u>Less</u>	<u>t</u>	<u>t</u>
Difference	-.64	-.51	.28		.09	-.15	.73	.02
<u>Personal Relevance:</u>								
Difference	-1.25	-.46	1.46		.43	-.15	.96	.38
<u>Dislike:</u>								
Difference	-.72	-.45	.22		.27	-.35	1.51	.79
<u>Warm:</u>								
Difference	-.74	-.34	1.03		-.08	-.03	.34	1.14

The results in Table 20 show that attitudes towards commercials had no significant effect on preferences for foods of similar or opposite nutritional level. Therefore, H2 receives no support.

The following two subhypotheses of H2 predicted comparisons between treatment groups. They were tested using a priori contrasts.

H2a: Teenagers exposed to television food commercials for low-nutrition foods will prefer similar foods more than those exposed to pro-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding food preferences for similar low-nutrition foods: one between the low- and pro-nutrition groups; the other between the low-nutrition group and the control group. Table 21 shows that both contrasts were significant. However, the means for the low-nutrition group were smaller in both contrasts. Because the hypothesized direction was not obtained, H2a is not supported.

Table 21. Contrasts of Preferences for  
Similar Low-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Low-Nutrition vs. Pro-Nutrition	3.75 4.89	4.46*
Low-Nutrition vs. Control	3.75 4.40	2.54*

-----  
\*p < .05

H2b: Teenagers exposed to television food commercials for pro-nutrition foods will prefer similar foods more than those exposed to low-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding food preferences for similar pro-nutrition foods: one between the pro- and low-nutrition groups; the other between the pro-nutrition group and the control group. As seen in Table 22, H2b was not supported because both contrasts were nonsignificant. However, the relationship between the means do reflect the hypothesized direction.

Table 22. Contrasts of Preferences for Similar Pro-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Pro-Nutrition vs. Low-Nutrition	4.51 4.12	1.65
Pro-Nutrition vs. Control	4.51 4.35	.66

H3: Teenagers exposed to televised commercials for specific foods will have more **intention to consume** those foods **exposed** to than foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.

Comparison for the total sample regarding consumption intentions for foods exposed to and foods not exposed to was significant ( $t=4.71$ ,  $p<.05$ ). Analyses by treatment condition showed that the average consumption intention of foods seen in commercials was significantly higher for those



exposed to pro-nutrition foods and to the combination of low- and pro-nutrition foods as compared to the consumption intention for foods not seen in ads (see Table 23). Those exposed to low-nutrition foods expressed a greater intention to consume foods not seen in the commercials. Therefore, the first part of H3 was supported for the pro-nutrition and combination groups.

Table 23. Consumption Intentions by Treatment Condition

	<u>Treatment Conditions</u>			<u>F</u>
	<u>Low-Nutr.</u> (n=58)	<u>Pro-Nutr.</u> (n=56)	<u>Combination</u> (n=59)	
Foods exposed to	3.60ab	4.82a	4.88b	15.43*
Foods not exposed to	4.05c	3.94d	3.46cd	8.69*
t-value	2.45*	4.64*	8.23*	4.71*

-----  
\*p < .05

NOTE: Same lower-case letters indicate that groups are significantly different.  
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Comparisons between the groups showed that the three groups differed significantly regarding consumption intentions of foods exposed to and foods not exposed to. A posteriori Scheffe tests showed that significant differences exist between the low- and pro-nutrition groups, and between the low-nutrition and combination groups regarding consumption intentions for foods exposed to at the .05 level and with a 3.49 range value. Significant differences also exist between the combination and low-nutrition groups, and

between the combination and pro-nutrition groups regarding consumption intentions for foods not seen at the .05 level and with a 3.49 range value.

Because the second part of H3 refers to a stronger effect among those with more favorable attitudes towards the commercials, the indices for the four attitudinal factors were dichotomized by their median to create two categories of favorability. Table 24 shows the means for each cell.

Table 24. Means of Consumption Intentions by Strength of Attitudes Towards Commercials

		<u>Treatment Conditions</u>					
		<u>Low-Nutrition</u> (n=59)		<u>Pro-Nutrition</u> (n=56)		<u>Combination</u> (n=60)	
		<u>More</u>	<u>Less</u>	<u>More</u>	<u>Less</u>	<u>More</u>	<u>Less</u>
<u>Entertaining:</u>							
Exposed		3.78	3.38	5.25	4.52	4.97	4.74
Not exposed		4.01	4.10	3.92	3.96	3.47	3.44
<u>Personal Relevance:</u>							
Exposed		4.06	3.52	5.64	4.61	4.90	4.88
Not exposed		4.32	4.00	4.09	3.87	3.44	3.53
<u>Dislike:</u>							
Exposed		3.22	4.02	4.61	5.02	4.50	5.09
Not exposed		4.09	4.01	3.86	4.02	3.67	3.36
<u>Warm:</u>							
Exposed		3.90	3.33	5.31	4.45	4.93	4.82
Not exposed		4.03	4.03	4.03	3.88	3.45	3.50

The means in Table 24 for the pro-nutrition and combination groups follow the hypothesized direction. Because the hypothesis states a greater consumption

intention for foods exposed to than for foods not exposed to, difference scores were constructed reflecting the degree of consumption intention (exposed minus not exposed). The test of these difference scores regarding attitudes towards commercials are presented in Table 25.

Table 25. Difference Scores of Consumption Intentions by Strength of Attitudes Towards Commercials (Exposed - Not Exposed)

<u>Treatment Conditions</u>										
<u>Low-Nutrition</u> (n=59)				<u>Pro-Nutrition</u> (n=56)			<u>Combination</u> (n=60)			Over- all t
<u>More</u>	<u>Less</u>	<u>t</u>	<u>More</u>	<u>Less</u>	<u>t</u>	<u>More</u>	<u>Less</u>	<u>t</u>		
<u>Entertaining:</u>										
Difference										
-.23	-.72	1.45	1.33	.56	1.95	1.50	1.30	.56	2.11*	
<u>Personal Relevance:</u>										
Difference										
-.26	-.48	.52	1.55	.74	1.57	1.46	1.35	.36	1.19	
<u>Dislike:</u>										
Difference										
-.87	.01	2.49*	.75	1.00	.63	.83	1.73	2.73*	3.76*	
<u>Warm:</u>										
Difference										
-.13	-.70	1.72	1.28	.57	1.92	1.48	1.32	.42	2.40*	

-----  
\*p < .05

In terms of the difference scores for the pro-nutrition and combination groups, the more entertaining, the more personal relevance, the less dislike, and the more warmth in the commercials, the more intention to consume foods exposed to. However, only one of these relationships was significant; for the combination group, the less dislike

for the commercials seen, the more intention to consume the foods exposed to. For the low-nutrition group, the more dislike for the commercials seen, the more preference for foods not exposed to, which is what one might expect.

Overall, H3 was partially supported. The first part of H3 was supported for the pro-nutrition and combination groups, because they had significantly more intention to consume foods exposed to than foods not exposed to. This part of H3 is not supported for the low-nutrition group. The dislike factor had the expected significant effect in the consumption intention for foods seen.

The following four subhypotheses of H3 predicted comparisons between treatment groups. They were tested using a priori contrasts.

H3a: Teenagers exposed to television food commercials for low-nutrition foods will intend to consume these foods more than those exposed to pro-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding consumption intentions for advertised low-nutrition foods: one between the low- and pro-nutrition groups; the other between the low-nutrition group and the control group. Table 26 shows that neither contrast was significant. Therefore, H3a was not supported.

Table 26. Contrasts of Consumption Intentions  
for Advertised Low-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Low-Nutrition vs. Pro-Nutrition	3.60 3.56	.17
Low-Nutrition vs. Control	3.60 4.37	.20

H3b: Teenagers exposed to television food commercials for pro-nutrition foods will intend to consume these foods more than those exposed to low-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding consumption intentions for advertised pro-nutrition foods: one between the pro- and low-nutrition groups; the other between the pro-nutrition group and the control group. As Table 27 shows these contrasts were not significant, and H3b was not supported.

Table 27. Contrasts of Consumption Intentions  
for Advertised Pro-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Pro-Nutrition vs. Low-Nutrition	4.82 4.96	.54
Pro-Nutrition vs. Control	4.82 4.35	.35

H3c: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have less intention to consume these types of foods than those solely exposed to either pro- or low-nutrition foods.

This hypothesis suggested one contrast between the combination group and the pro-nutrition group regarding consumption intentions for advertised pro-nutrition foods. The other contrast was between the combination group and the low-nutrition group regarding consumption intentions for advertised low-nutrition foods. Although the means followed the expected direction, none of the contrasts was significant (see Table 28), and H3c was not supported.

Table 28. Contrasts of Consumption Intentions for Advertised Low- and Pro-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
<u>Consumption Intentions for Low-Nutrition Foods</u>		
Combination vs. Low-Nutrition	3.53 3.60	.28
Combination vs. Control	3.53 3.65	.48
-----		
<u>Consumption Intentions for Pro-Nutrition Foods</u>		
Combination vs. Pro-Nutrition	4.77 4.82	.19
Combination vs. Control	4.77 4.91	.55
-----		

H3d: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have more intention to consume these foods than those exposed to nonfood commercials.

This hypothesis suggested contrasts between the combination group and the control group regarding consumption intentions for advertised low- and pro-nutrition foods. The results in Table 28 do not provide support for H3d.

H4: Teenagers exposed to televised commercials for either low- or pro-nutrition foods will have more **intention to consume** foods of **similar** nutritional level to the ads seen than for foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.

The dependent variables were consumption intentions for foods of similar nutritional level and of the opposite nutritional level (dissimilar) to the foods seen in the commercials. Comparison for the total sample regarding consumption intentions for similar and dissimilar foods was significant ( $t=2.02$ ,  $p<.05$ ). Analysis were then broken down by treatment conditions. The hypothesized relationship was supported for those exposed to low-nutrition foods, because they had significantly more intention to consume foods similar in nutritional value to the ads seen than for dissimilar foods. The relationship was reversed for those exposed to pro-nutrition foods. Teenagers had significantly more intention to consume low-nutrition foods despite of the

types of foods seen. Additional comparisons between the two groups show that the groups differed significantly in consumption intentions for both similar and dissimilar foods (see Table 29).

Table 29. Consumption Intentions for Foods of Similar and Dissimilar Nutritional Levels by Treatment Condition

	<u>Treatment Conditions</u>		<u>t</u>
	<u>Low-Nutrition</u> (n=59)	<u>Pro-Nutrition</u> (n=56)	
Similar	4.75	2.77	9.48*
Dissimilar	3.73	4.53	4.27*
<hr/>			
t-value	4.85*	12.55*	2.02*

-----  
\*p < .05

The second part of H4 refers to a stronger effect among those with more favorable attitudes towards the commercials. The four attitudinal factors were dichotomized by their median into more or less favorable attitudes. Table 30 shows the means for each cell.



Table 30. Means of Consumption Intentions for Foods of Similar and Dissimilar Nutritional Levels by Strength of Attitudes Towards Commercials

	<u>Treatment Conditions</u>			
	<u>Low-Nutrition</u> (n=59)		<u>Pro-Nutrition</u> (n=56)	
	<u>More</u>	<u>Less</u>	<u>More</u>	<u>Less</u>
<u>Entertaining:</u>				
Similar	4.81	4.66	2.77	2.76
Dissimilar	3.62	3.86	4.50	4.54
-----				
<u>Personal Relevance:</u>				
Similar	5.02	4.70	2.91	2.73
Dissimilar	3.97	3.69	4.68	4.45
-----				
<u>Dislike:</u>				
Similar	4.66	4.84	2.76	2.77
Dissimilar	3.85	3.60	4.40	4.65
-----				
<u>Warm:</u>				
Similar	4.95	4.46	2.90	2.67
Dissimilar	3.58	3.87	4.59	4.49
-----				

The hypothesis states a greater consumption intention for foods of similar nutritional level to the commercials seen than for dissimilar foods. Therefore, difference scores were constructed reflecting the degree of consumption intention (similar minus dissimilar). The test of these difference scores regarding attitudes towards commercials are presented in Table 31.

Table 31. Difference Scores of Consumption Intentions for Foods of Similar and Dissimilar Nutritional Levels by Strength of Attitudes Towards Commercials (Similar - Dissimilar)

<u>Treatment Conditions</u>							
	<u>Low-Nutrition</u> (n=59)			<u>Pro-Nutrition</u> (n=56)			<u>Over- all</u>
	<u>More</u>	<u>Less</u>	<u>t</u>	<u>More</u>	<u>Less</u>	<u>t</u>	<u>t</u>
<u>Entertaining:</u>							
Difference	1.19	.80	.73	-1.73	-1.78	.15	1.72
<u>Personal Relevance:</u>							
Difference	1.05	1.01	.06	-1.78	-1.72	.14	.05
<u>Dislike:</u>							
Difference	.81	1.24	.81	-1.64	-1.88	.85	.13
<u>Warm:</u>							
Difference	1.37	.59	1.67	-1.69	-1.82	.42	2.02

The results in Table 31 show that attitudes towards commercials had no significant effect on intentions to consume foods of similar or dissimilar nutritional levels. Therefore, the second part of H4 is not supported. Overall, H4 was supported only for the low-nutrition group in their expressed intention to consume foods similar to the ones seen in the commercials.

The following four subhypotheses of H4 predicted comparisons between treatment groups. They were tested using a priori contrasts.

H4a: Teenagers exposed to television food commercials for low-nutrition foods will intend to consume similar foods more than those exposed to pro-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding consumption intentions for similar low-nutrition foods: one between the low- and pro-nutrition groups; the other between the low-nutrition group and the control group. Table 32 shows that the first contrast was significant, but the mean for the low-nutrition group was smaller than the mean of the other two comparison groups. Because the hypothesized direction was not obtained, H4a was not supported. Yet once again it was found that those exposed to pro-nutrition foods had more intention to consume foods of the opposite nutritional level.

Table 32. Contrasts of Consumption Intentions  
for Similar Low-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Low-Nutrition vs. Pro-Nutrition	4.75 5.50	3.21*
Low-Nutrition vs. Control	4.75 4.98	1.00

-----  
\*p < .05

H4b: Teenagers exposed to television food commercials for pro-nutrition foods will intend to consume similar foods more than those exposed to low-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding consumption intentions for similar pro-nutrition foods: one between the pro- and low-nutrition groups; the other between the pro-nutrition group and the control group. As seen in Table 33, H4b was not supported because neither contrast was significant even though the means reflected the hypothesized direction.

Table 33. Contrasts of Preferences for Similar Pro-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Pro-Nutrition vs. Low-Nutrition	4.51 4.12	1.65
Pro-Nutrition vs. Control	4.51 4.35	.66

H5: Teenagers exposed to televised commercials for specific foods will have more **intention to buy** those foods **exposed** to than foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.

Multivariate analyses of variance for foods exposed to and foods not exposed to were run to determine if there were any significant differences in purchasing intentions among the three groups that saw food commercials (see Table 34).

Table 34. Purchasing Intentions by Treatment Condition

	<u>Treatment Conditions</u>			<u>F</u>
	<u>Low-Nutr.</u> (n=58)	<u>Pro-Nutr.</u> (n=56)	<u>Combination</u> (n=59)	
Foods exposed to	3.38ab	4.39a	4.68b	10.91*
Foods not exposed to	4.42c	4.08	3.79c	5.86*
t-value	5.24*	1.43	5.23*	.25

-----  
 \*p < .05

NOTE: Same lower-case letters indicate that groups are significantly different.  
 -----

Comparison for the total sample regarding purchasing intentions for foods exposed to and foods not exposed to was not significant ( $t=.25$ ,  $p>.05$ ). However, there were some significant relationships when the analysis was broken down by treatment conditions. The hypothesized relationship was manifested in the pro-nutrition and combination groups, that is, they had more intention to buy foods they saw in the commercials than foods they were not exposed to; however, only the purchasing intentions for the combination group were significant. The reversed relationship was found for the low-nutrition group; they had more intention to buy foods not seen in the commercials and less purchasing intentions for foods they were exposed to.

Comparisons between the groups showed that the three groups differed significantly regarding purchasing intentions of foods exposed to and foods not exposed to. A posteriori Scheffe tests showed that significant differences

exist between the low- and pro-nutrition groups, and between the low-nutrition and combination groups regarding purchasing intentions for foods exposed to at the .05 level and with a 3.49 range value. Significant differences also exist between the combination and low-nutrition groups regarding purchasing intentions for foods not exposed to at the .05 level and with a 3.49 range value.

Because the second part of H5 refers to a stronger effect among those with more favorable attitudes towards the commercials, the indices for the four attitudinal factors were dichotomized by their median to create two categories of favorability. Table 35 shows the means for each cell.

Table 35. Means of Purchasing Intentions by Strength of Attitudes Towards Commercials

Treatment Conditions						
<u>Low-Nutrition</u> (n=59)			<u>Pro-Nutrition</u> (n=56)		<u>Combination</u> (n=60)	
<u>Entertaining:</u>	<u>More</u>	<u>Less</u>	<u>More</u>	<u>Less</u>	<u>More</u>	<u>Less</u>
Exposed	3.54	3.18	4.81	4.12	4.76	4.64
Not exposed	4.49	4.34	4.18	4.02	3.75	3.93
<hr/>						
<u>Personal Relevance:</u>						
Exposed	3.75	3.31	5.56	4.10	4.75	4.62
Not exposed	4.74	4.36	4.38	3.99	3.98	3.91
<hr/>						
<u>Dislike:</u>						
Exposed	3.02	3.76	4.12	4.64	4.18	4.98
Not exposed	4.35	4.50	3.89	4.25	4.09	3.66
<hr/>						
<u>Warm:</u>						
Exposed	3.53	3.26	4.88	4.02	4.75	4.65
Not exposed	4.55	4.27	4.24	3.96	3.80	3.77

For the pro-nutrition and combination groups, the means reflect the expected contributions of the four attitudinal factors: more entertaining, more personal relevance, less dislike, and more warmth. As suggested in Table 34, the low-nutrition group had more intention to buy foods not exposed to. However, the pro-nutrition and combination groups met expectations regarding more intention to consume foods seen in the commercials.

The hypothesis states a greater purchasing intention for foods exposed to than for foods not exposed to. Therefore, difference scores were constructed reflecting the degree of purchasing intention (exposed minus not exposed). The test of these difference scores regarding attitudes towards commercials are presented in Table 36.

Table 36. Difference Scores of Purchasing Intentions by Strength of Attitudes Towards Commercials (Exposed - Not Exposed)

<u>Treatment Conditions</u>										
<u>Low-Nutrition</u> (n=59)			<u>Pro-Nutrition</u> (n=56)			<u>Combination</u> (n=60)			<u>Over- all t</u>	
<u>More</u>	<u>Less</u>	<u>t</u>	<u>More</u>	<u>Less</u>	<u>t</u>	<u>More</u>	<u>Less</u>	<u>t</u>		
<u>Entertaining:</u>										
Difference										
-.95	-1.16	.57	.63	.10	1.19	1.01	.71	1.02	1.51	
<u>Personal Relevance:</u>										
Difference										
-.99	-1.05	.13	1.18	.11	2.03*	.77	.71	.60	1.31	
<u>Dislike:</u>										
Difference										
-1.33	-.74	1.50	.23	.39	.52	.09	1.32	4.14*	3.47*	
<u>Warm:</u>										
Difference										
-1.02	-1.01	.01	.64	.06	1.33	.95	.88	.83	1.40	

In terms of the difference scores for the pro-nutrition and combination groups, the more entertaining, the more personal relevance, the less dislike, and the more warmth, the more intention to buy foods exposed to. However, only two of these relationships were significant; the more personal relevance in the pro-nutrition food commercials, the more purchasing intention for those foods seen. Also, the less dislike for the commercials seen by the combination group, the more intention to buy the foods exposed to. None of the relationships was significant for the low-nutrition group.



Overall, H5 was partially supported. The first part of the hypothesis was supported for the combination group, although the pro-nutrition group also followed the expected direction. This part of H5 is not supported for the low-nutrition group.

The personal relevance factor contributed to a stronger purchasing intention for pro-nutrition foods seen; the dislike factor contributed to a stronger purchasing intention for the combination group. Therefore, the second part of H5 was supported only in terms of the personal relevance factor regarding the pro-nutrition group, and in terms of the dislike factor regarding the combination group.

The following four subhypotheses of H5 predicted comparisons between treatment groups. They were tested using a priori contrasts.

H5a: Teenagers exposed to television food commercials for low-nutrition foods will intend to buy these foods more than those exposed to pro-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding purchasing intentions for advertised low-nutrition foods: one between the low- and pro-nutrition groups; the other between the low-nutrition group and the control group. Table 37 shows that neither contrast was significant although the means followed the expected direction. Therefore, H5a was not supported.

Table 37. Contrasts of Purchasing Intentions  
for Advertised Low-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Low-Nutrition vs. Pro-Nutrition	3.37 3.27	.43
Low-Nutrition vs. Control	3.37 3.35	.06

H5b: Teenagers exposed to television food commercials for pro-nutrition foods will intend to buy these foods more than those exposed to low-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding purchasing intentions for advertised pro-nutrition foods: one between the pro- and low-nutrition groups; the other between the pro-nutrition group and the control group. As Table 38 shows these contrasts were not significant, and H5b was not supported.

Table 38. Contrasts of Purchasing Intentions  
for Advertised Pro-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Pro-Nutrition vs. Low-Nutrition	4.39 4.75	1.22
Pro-Nutrition vs. Control	4.39 4.72	1.11

H5c: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have less intention to buy these types of foods than those solely exposed to either pro- or low-nutrition foods.

This hypothesis suggested one contrast between the combination group and the pro-nutrition group regarding purchasing intentions for advertised pro-nutrition foods. The other contrast was between the combination group and the low-nutrition group regarding purchasing intentions for low-nutrition foods seen. None of the contrasts was significant (see Table 39), and H5c was not supported.

Table 39. Contrasts of Purchasing Intentions for Advertised Low- and Pro-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
<u>Preference for Low-Nutrition Foods</u>		
Combination vs. Low-Nutrition	4.70 4.52	.52
Combination vs. Control	4.70 4.60	.29
-----		
<u>Preference for Pro-Nutrition Foods</u>		
Combination vs. Pro-Nutrition	4.66 4.72	.17
Combination vs. Control	4.66 5.09	1.22
-----		

H5d: Teenagers exposed to a combination of pro- and low-nutrition television food commercials will have more preference for these types of foods than those exposed to nonfood commercials.

This hypothesis suggested contrasts between the combination group and the control group regarding purchasing intentions for low- and pro-nutrition foods. The results on Table 39 do not provide support for H5d.

H6: Teenagers exposed to televised commercials for either low- or pro-nutrition foods will have more **intention to buy** foods of **similar** nutritional level to the ads seen than for foods not exposed to. This effect will be stronger among those with more favorable attitudes towards food commercials.

The dependent variables were purchasing intentions for foods of similar nutritional level and of the opposite nutritional level (dissimilar) to the commercials seen. Comparison for the total sample regarding purchasing intentions for similar and dissimilar foods was not significant ( $t=.75$ ,  $p>.05$ ). When broken down by treatment conditions, it was found that those exposed to low-nutrition foods had more intention to buy foods similar in nutritional value to the ads seen than for dissimilar foods, but this relationship was not significant. The relationship was reversed for those exposed to pro-nutrition foods; teenagers had significantly more intention to buy low-nutrition foods not seen than the pro-nutrition foods exposed to (see Table 40). Therefore, the first part of H6 was not supported.

Table 40. Purchasing Intentions for Foods of Similar and Dissimilar Nutritional Levels by Treatment Condition

	<u>Treatment Conditions</u>		<u>t</u>
	<u>Low-Nutrition</u> (n=59)	<u>Pro-Nutrition</u> (n=56)	
Similar	4.61	3.75	3.10*
Dissimilar	4.34	4.24	.25
<hr/>			
t-value	.99	2.51*	.75

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\*p < .05

Because the second part of H6 refers to a stronger effect among those with more favorable attitudes towards the commercials, the indices for the four attitudinal factors were dichotomized by their median to create two categories of favorability. Table 41 presents the means for each cell.

Table 41. Means of Purchasing Intentions for Foods of Similar and Dissimilar Nutritional Levels by Strength of Attitudes Towards Commercials

	<u>Treatment Conditions</u>			
	<u>Low-Nutrition</u> (n=59)		<u>Pro-Nutrition</u> (n=56)	
	<u>More</u>	<u>Less</u>	<u>More</u>	<u>Less</u>
<u>Entertaining:</u>				
Similar	4.69	4.54	3.82	3.71
Dissimilar	4.40	4.27	4.33	4.17
-----				
<u>Personal Relevance:</u>				
Similar	4.96	4.54	4.24	3.60
Dissimilar	4.63	4.29	4.45	4.17
-----				
<u>Dislike:</u>				
Similar	4.54	4.96	3.72	3.78
Dissimilar	4.29	4.63	3.97	4.48
-----				
<u>Warm:</u>				
Similar	4.71	4.52	3.91	3.63
Dissimilar	4.40	4.29	4.38	4.13
-----				

The hypothesis states a greater purchasing intention for foods of similar nutritional level to the ones seen than for dissimilar foods. Difference scores were constructed reflecting the degree of purchasing intention (similar minus dissimilar). The test of these difference scores regarding attitudes towards commercials are presented in Table 42.

Table 42. Difference Scores of Purchasing Intentions for Foods of Similar and Dissimilar Nutritional Levels by Strength of Attitudes Towards Commercials (Similar - Dissimilar)

	<u>Treatment Conditions</u>						
	<u>Low-Nutrition</u> (n=59)			<u>Pro-Nutrition</u> (n=56)			<u>Over-</u> <u>all</u>
	<u>More</u>	<u>Less</u>	<u>t</u>	<u>More</u>	<u>Less</u>	<u>t</u>	<u>t</u>
<u>Entertaining:</u>							
Difference	.29	.27	.12	-.51	-.46	.18	.38
<u>Personal Relevance:</u>							
Difference	.33	.25	.16	-.21	-.57	.66	.49
<u>Dislike:</u>							
Difference	.25	.33	.28	-.25	-.70	1.14	.57
<u>Warm:</u>							
Difference	.31	.23	.78	-.47	-.50	.02	.90

Table 42 shows no significant relationships. However, the low-nutrition group had more intention to buy similar low-nutrition foods; their difference scores reflected the expected directions--the more entertaining, the more personal relevance, the less dislike, and the more warmth, the more intention to buy similar low-nutrition foods. The pro-nutrition had more intention to buy dissimilar foods or foods of the opposite nutritional level. Therefore, H6 was not supported.

The following four subhypotheses of H6 predicted comparisons between treatment groups. They were tested using a priori contrasts.

H6a: Teenagers exposed to television food commercials for low-nutrition foods will intend to buy similar foods more than those exposed to pro-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding purchasing intentions for similar low-nutrition foods: one between the low- and pro-nutrition groups; the other between the low-nutrition group and the control group. Table 43 shows that the first contrast was significant, but the mean for the low-nutrition group was smaller as compared to the one for the pro-nutrition group. Because the hypothesized direction was not confirmed, H6a is not supported.

Table 43. Contrasts of Purchasing Intentions  
for Similar Low-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Low-Nutrition vs. Pro-Nutrition	4.61 5.20	2.29*
Low-Nutrition vs. Control	4.61 5.00	1.51

-----  
\*p < .05



H6b: Teenagers exposed to television food commercials for pro-nutrition foods will intend to buy similar foods more than those exposed to low-nutrition foods or nonfood commercials.

This hypothesis suggested two contrasts regarding purchasing intentions for similar pro-nutrition foods: one between the pro- and low-nutrition groups; the other between the pro-nutrition group and the control group. Table 44 shows that none of the contrasts was significant, and H6a was not supported.

Table 44. Contrasts of Purchasing Intentions for Similar Pro-Nutrition Foods

<u>Contrast Groups</u>	<u>Means</u>	<u>t</u>
Pro-Nutrition vs. Low-Nutrition	3.75 3.94	.68
Pro-Nutrition vs. Control	3.75 3.85	.77

The test of the last hypothesis ties in with the next section of this chapter, Test of the Model. Hypothesis 7 tests the last loop of the model as related to Americanization. This hypothesis will be discussed in this section, and the rest of the model will be analyzed in the following section.

Because Hypothesis 7 suggests that the interaction between more favorable attitudes towards commercials and a closer social distance will mediate the relationship between

exposure to specific foods and food preferences and consumption and purchasing intentions, different cells were constructed showing the relationship between the interaction variables regarding American foods exposed to and other foods exposed to. The four attitudinal factors were dichotomized by their median into more and less favorable attitudes towards commercials. Social distance was also dichotomized at its median (1.806) into more and less social distance. There are four relationships: (1) more favorable attitude, less social distance; (2) more favorable attitude, more social distance; (3) less favorable attitude, less social distance; (4) less favorable attitude, more social distance. These relationships are replicated four times, one for each of the four attitudinal factors, and they are applicable to the three subhypotheses of H7.

Multivariate analysis of covariance was used to test whether there is a mediating role by the interaction of favorable attitudes towards commercials and a closer social distance. Multivariate procedures were used because the two dependent variables (US foods exposed to and Non-US foods exposed to) for each of the outcome variables (food preferences, consumption intentions, and purchasing intentions) were significantly correlated (see Table 7, page 65). The effects were tested by means of F tests based on the Mean Square error term (Keppel, 1982). After presenting the results for each subhypothesis, a summary table will

compare the F-ratios with and without covariates (see Table 60). The criterion for statistical significance was set at alpha .05.

Dummy coding was used to create four variables representing the hypothesized relationships for the interaction terms: (1) more entertaining and closer social distance; (2) more personal relevance and closer social distance; (3) less dislike and closer social distance; (4) more warmth and closer social distance.

The interaction terms were used as covariates to allow for statistical adjustment in the outcome variables. In this procedure, variation in the outcome variables is removed, and a conventional multivariate analysis of variance is performed on the corrected scores.

If these interaction factors are mediators of preferences, consumption and purchasing intentions for American foods, including these interaction factors as covariates should reduce the main effect of the treatment, type of food advertising, on the outcome variables to a nonsignificant level. However, if a significant effect remains after statistical removal of the presumed mediating effect, then these interaction factors may not be the only mediators of the outcome variables.

H7: More favorable attitudes towards food commercials in interaction with a closer social distance will mediate:

H7a: Exposure to televised commercials for specific foods and **preferences** for American foods exposed to than for other foods exposed to. There will be more preference for advertised US foods than for non-US foods.

H7a tests the mediating effect of the interaction between attitudes towards commercials and social distance on preferences for advertised foods of US and non-US origin. Before testing the mediating effect and to examine the relationship between the cells, multivariate analyses of variance were first run to determine if there were any significant differences in food preferences among the three groups that saw food commercials (see Table 45). Preferences for US foods corresponds only to the American foods seen. That is, this variable assesses the preference of the low-nutrition group for Coca-Cola and Hershey chocolates. Likewise, it assesses the preference of the combination group for only these two products; the combination group did not view US pro-nutrition foods. The preference for the pro-nutrition group refers to Kraft cheeses.

Table 45. Food Preferences of US and Non-US  
Foods by Treatment Condition

	<u>Treatment Conditions</u>			<u>F</u>
	<u>Low-Nutr.</u> (n=58)	<u>Pro-Nutr.</u> (n=56)	<u>Combination</u> (n=59)	
US Foods	5.18a	3.63ab	5.03b	14.92*
Non-US Foods	3.82	4.15	3.38	2.98
-----				
t-value	5.05*	2.04*	6.84*	5.16*
-----				

\*p < .05

NOTE: Same lower-case letters indicate that groups are  
significantly different.

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Comparison for the total sample regarding preferences for US and non-US foods was significant ( $t=5.16$ ,  $p<.05$ ). The analysis was then broken down by treatment condition. The low-nutrition and combination groups had significantly more preference for the US low-nutrition foods seen (Coca-Cola and Hershey chocolates). The pro-nutrition group had significantly less preference for Kraft cheeses than for other pro-nutrition foods seen.

Comparison between the groups showed that the three groups differed significantly regarding their preferences for American foods. A posteriori Scheffe tests showed that significant differences exist between the low- and pro-nutrition groups, and between the pro-nutrition and combination groups at the .05 level with a 3.49 range value.

The relationships between the interaction variables are shown in Table 46. The results first show that there is consistently more preference for American foods, regardless of attitudes or social distance.

Table 46. Means for the Interaction Between Attitudes Towards Food Commercials and Social Distance on Food Preferences for US and Non-US Foods

		<u>Social Distance</u>			
		<u>Less</u>		<u>More</u>	
		<u>US</u>	<u>~US</u>	<u>US</u>	<u>~US</u>
Entertaining:	More	4.92	4.42	4.86	4.01
	Less	4.36	3.46	4.32	3.29
-----					
Personal Relevance:	More	6.00	5.20	4.82	3.86
	Less	4.36	3.67	4.60	3.69
-----					
Dislike:	More	4.33	3.76	4.45	3.39
	Less	4.81	3.97	4.82	4.03
-----					
Warm:	More	4.99	4.38	4.88	3.89
	Less	4.26	3.41	4.39	3.48
-----					

The hypothesis states a greater preference for American foods exposed to than for other foods exposed to; therefore, difference scores were constructed reflecting the degree of preferences (Preference for US minus Non-US Foods). The tests of these difference scores are presented in Table 47.

Table 47. Difference Scores of Preference for US Foods by the Interaction of Attitudes Towards Commercials and Social Distance (US - Non-US Foods)

		<u>Social Distance</u>		<u>F</u> *
		Less	More	
Entertaining:	More	.50	.85	.31
	Less	.90	1.03	
-----				
Personal Relevance:	More	.80	.96	.15
	Less	.69	.91	
-----				
Dislike:	More	.57	1.06	.34
	Less	.84	.79	
-----				
Warm:	More	.61	.99	.23
	Less	.85	.91	
-----				

\* Interaction Fs

Since the interaction Fs were not significant, no further tests within cells were performed. These results do not suggest a mediating role for the interaction variables. Furthermore, the means are not in supportive directions.

Multivariate analysis of covariance was used to test whether there is a mediating role by the interaction of favorable attitudes towards commercials and a closer social distance. The two dependent variables for food preferences, US foods exposed to and Non-US foods exposed to, were significantly correlated ( $r=.25$ ,  $p<.05$ ). Table 48 shows the multivariate analyses of variance without extracting the interaction terms, and Table 49 shows the multivariate analyses of covariance.

Table 48. Multivariate Analysis of Variance for Treatment Conditions on Preferences for US and Non-US Foods

**US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	5.18	3.63	5.03
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Treatment	83.28	2	41.64	14.92	.000*
Error	470.65	169	2.79		
Total	553.93	171	3.24		

**NON-US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	3.82	4.15	3.38
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Treatment	17.06	2	8.53	2.98	.053
Error	483.36	169	2.86		
Total	500.42	171			

\*p < .05

Table 48 shows a main effect for treatment on preferences for US foods. There is no significant main effect for non-US foods.

Next, analyses included as covariates the interaction between the four attitudinal factors and social distance. The results in Table 49 yield no mediating effect for preferences for US foods, because significances for the treatment effect did not vanish after adjusting for the effects of the interaction terms. Treatment effects were not significant for non-US foods. Therefore, H7a is not supported.



Table 49. Multivariate Analysis of Covariance for Treatment Conditions on Preferences for US and Non-US Foods

**US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	5.18	3.63	5.03
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Covariates	23.52	4	5.88	2.17	.075
Treatment	88.44	2	44.22	16.32	.000*
Error	447.14	165	2.71		
Total	459.10	171	2.67		

**NON-US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	3.82	4.15	3.38
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Covariates	28.57	4	7.14	2.59	.039*
Treatment	16.32	2	8.16	2.74	.055
Error	454.79	165	2.76		
Total	499.68	171	3.03		

\*p &lt; .05

H7b: Exposure to televised commercials for specific foods and the **intention to consume** American foods exposed to than for other foods exposed to. There will be more consumption intention for advertised US foods than for non-US foods.

H7b tests the mediating effect of the interaction between favorable attitudes towards commercials and a closer social distance on consumption intentions for advertised foods of US and non-US origin. Before testing the mediating effect and to examine the relationship between the cells, multivariate analyses of variance were first run to determine if there were any significant differences in

consumption intentions among the three groups that saw food commercials (see Table 50).

Table 50. Consumption Intentions of US and Non-US Foods by Treatment Condition

	<u>Treatment Conditions</u>			<u>F</u>
	<u>Low-Nutr.</u> (n=59)	<u>Pro-Nutr.</u> (n=56)	<u>Combination</u> (n=59)	
US Foods	4.69	5.27	4.78	1.68
Non-US Foods	2.50a	4.67ab	2.29b	44.51*
<hr/>				
t-value	8.29*	2.28*	10.26*	11.13*

-----  
\*p < .05

NOTE: Same lower-case letters indicate that groups are significantly different.  
-----

Comparison for the total sample regarding consumption intentions for US and non-US foods was significant ( $t=11.13$ ,  $p<.05$ ). The analysis was then broken down by treatment conditions. The three groups had significantly more intention to consume the American foods for which they saw commercials than for the other foods they saw advertised. The low-nutrition and combination groups saw commercials for Coca-Cola and Hershey chocolates. The pro-nutrition groups saw a commercial for Kraft cheeses.

There was no significant difference between the groups regarding consumption intentions for American foods. The groups differed significantly regarding their intentions to consume non-US foods they saw advertised. The low-nutrition

and combination groups saw commercials for Mon Cheri chocolates and Disco snack cookies. The pro-nutrition group saw commercials for milk, Lotus juices, and Pan Pepin (bread). A posteriori Scheffe tests showed that significant differences exist between the low- and pro-nutrition groups, and between the pro-nutrition and combination groups at the .05 level with a 3.49 range value.

The relationship between the interaction variables are shown in Table 51. The results show that there is consistently more preference for American foods, regardless of attitudes or social distance.

Table 51. Means for the Interaction Between Attitudes Towards Food Commercials and Social Distance on Consumption Intentions for US and Non-US Foods

		<u>Social Distance</u>			
		Less		More	
		<u>US</u>	<u>~US</u>	<u>US</u>	<u>~US</u>
Entertaining:	More	5.13	3.79	4.80	2.79
	Less	4.84	3.17	4.97	3.15
-----					
Personal Relevance:	More	6.28	4.26	4.59	2.89
	Less	4.74	3.26	4.95	2.94
-----					
Dislike:	More	4.77	3.33	4.44	2.81
	Less	5.11	3.51	5.24	3.04
-----					
Warm:	More	4.99	3.58	5.07	2.91
	Less	4.95	3.31	4.67	2.99
-----					

The hypothesis states a greater consumption intention for American foods exposed to than for other foods exposed to; therefore, difference scores were constructed reflecting the degree of consumption intentions (US minus Non-US

Foods). The test of these difference scores are presented in Table 52.

Table 52. Difference Scores of Consumption Intentions for US Foods by the Interaction of Attitudes Towards Commercials and Social Distance (US - Non-US Foods)

		<u>Social Distance</u>		<u>F</u> *
		Less	More	
Entertaining:	More	1.34	2.01	.95
	Less	1.67	1.82	
-----				
Personal Relevance:	More	2.02	1.70	.75
	Less	1.48	2.01	
-----				
Dislike:	More	1.44	1.63	1.11
	Less	1.60	2.20	
-----				
Warm:	More	1.41	2.16	1.04
	Less	1.64	1.68	
-----				

\* Interaction Fs

Since the interaction Fs were not significant, no further tests within cells were performed. These results do not suggest a mediating role for the interaction variables.

Multivariate analysis of covariance was used to test whether there is a mediating effect by the interaction of favorable attitudes towards commercials and a closer social distance. The two dependent variables for consumption intentions, US foods exposed to and Non-US foods exposed to, were significantly correlated ( $r=.33$ ,  $p<.05$ ). Table 53 shows the multivariate analyses of variance without extracting the interaction terms, and Table 54 shows the multivariate analyses of covariance.

Table 53. Multivariate Analysis of Variance for Treatment Conditions on Consumption Intentions for US and Non-US Foods

**US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	4.69	5.27	4.78
n	59	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Treatment	10.90	2	5.45	1.68	.189
Error	554.63	171	3.24		
Total	565.53	173	3.27		

**NON-US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	2.50	4.67	2.29
n	59	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Treatment	198.49	2	99.25	44.51	.000*
Error	381.71	171	2.23		
Total	580.20	173	3.35		

\*p < .05

Table 53 shows a main effect for treatment on consumption intentions for non-US foods. There is no significant main effect for US foods.

Next, analyses included as covariates the interaction between the four attitudinal factors and social distance. The results in Table 54 yield no mediating effect for consumption intentions for non-US foods, because significances for the treatment effect did not vanish after controlling for the interaction terms. There were no significant results for US foods. Therefore, the mediating effect hypothesized in H7b is not supported.

Table 54. Multivariate Analysis of Covariance for Treatment Conditions on Consumption Intentions for US and Non-US Foods

**US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	4.69	5.27	4.78
n	59	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Covariates	20.90	4	5.23	1.63	.168
Treatment	8.96	2	4.48	1.40	.249
Error	533.73	167	3.20		
Total	563.59	173	3.26		

**NON-US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	2.50	4.67	2.29
n	59	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Covariates	18.77	4	4.69	2.16	.076
Treatment	196.52	2	98.26	45.28	.000*
Error	362.94	167	2.17		
Total	578.23	173	3.34		

\*p < .05

H7c: Exposure to televised commercials for specific foods and the **intention to buy** American foods exposed to than for other foods exposed to. There will be more purchasing intention for advertised US foods than for non-US foods.

H7c tests the mediating effect of the interaction between attitudes towards commercials and social distance on purchasing intentions for advertised foods of US and non-US origin. Before testing the mediation effect and to examine the relationship between the cells, multivariate analyses of variance were first run to determine if there were any

significant differences in purchasing intentions among the three groups that saw food commercials (see Table 55).

Table 55. Purchasing Intentions of US and Non-US Foods by Treatment Condition

	<u>Treatment Conditions</u>			<u>F</u>
	<u>Low-Nutr.</u> (n=58)	<u>Pro-Nutr.</u> (n=56)	<u>Combination</u> (n=59)	
US Foods	4.52	4.55	4.68	.10
Non-US Foods	2.23a	4.33ab	2.09b	38.58*
<hr/>				
t-value	8.51*	.85	10.62*	10.24*

-----  
\*p < .05

NOTE: Same lower-case letters indicate that groups are significantly different.  
-----

Comparison for the total sample regarding purchasing intentions for US and non-US foods was significant ( $t=10.24$ ,  $p<.05$ ). The analysis was then broken down by treatment conditions. The three groups had more intention to buy the American foods for which they saw commercials than for the other foods they saw advertised; however, these relationships were significant only for the low-nutrition and combination groups. The low-nutrition and combination groups saw commercials for Coca-Cola and Hershey chocolates. The pro-nutrition group saw a commercial for Kraft cheeses.

There were no significant differences between the groups regarding purchasing intentions for American foods. The groups differed significantly regarding their intentions

to buy non-US foods they saw advertised. The low-nutrition and combination groups saw commercials for Mon Cheri chocolates and Disco snack cookies. The pro-nutrition group saw commercials for milk, Lotus juices, and Pan Pepin (bread). A posteriori Scheffe tests showed that significant differences exist between the low- and pro-nutrition groups, and between the pro-nutrition and combination groups at the .05 level with a 3.49 range value.

The relationship between the interaction variables are shown in Table 56. The results show that there is consistently more preference for American foods, regardless of attitudes or social distance.

Table 56. Means for the Interaction Between Attitudes Towards Food Commercials and Social Distance on Purchasing Intentions for US and Non-US Foods

		<u>Social Distance</u>			
		<u>Less</u>		<u>More</u>	
		<u>US</u>	<u>~US</u>	<u>US</u>	<u>~US</u>
Entertaining:	More	4.86	3.34	4.52	2.58
	Less	4.28	2.72	4.76	3.10
-----					
Personal Relevance:	More	6.39	3.70	4.16	2.80
	Less	4.21	2.81	4.75	2.77
-----					
Dislike:	More	4.00	2.77	4.35	2.63
	Less	4.92	3.15	4.83	2.91
-----					
Warm:	More	4.96	3.15	4.64	2.66
	Less	4.14	2.84	4.65	2.99
-----					

The hypothesis states a greater purchasing intention for American foods exposed to than for other foods exposed to; therefore, difference scores were constructed reflecting the degree of purchasing intention (US minus Non-US Foods).



The test of these difference scores are presented in Table 57.

Table 57. Difference Scores of Purchasing Intentions for US Foods by the Interaction of Attitudes Towards Commercials and Social Distance (US - Non-US Foods)

		<u>Social Distance</u>		<u>F</u> *
		Less	More	
Entertaining:	More	1.52	1.94	.37
	Less	1.56	1.66	
-----				
Personal Relevance:	More	2.69	1.36	2.23
	Less	1.40	1.98	
-----				
Dislike:	More	1.23	1.72	.62
	Less	1.77	1.92	
-----				
Warm:	More	1.81	1.98	.70
	Less	1.30	1.66	

\* Interaction Fs

Since the interaction Fs were not significant, no further tests within cells were performed. These results do not suggest a mediating role for the interaction variables.

Multivariate analysis of covariance was used to test whether there is a mediating effect by the interaction of favorable attitudes towards commercials and a closer social distance. The two dependent variables for purchasing intentions, US foods exposed to and Non-US foods exposed to, were significantly correlated ( $r=.36$ ,  $p<.05$ ). Table 58 shows the multivariate analyses of variance without extracting the interaction terms, and Table 59 shows the multivariate analyses of covariance.

Table 58. Multivariate Analysis of Variance for Treatment Conditions on Purchasing Intentions for US and Non-US Foods

**US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	4.52	4.55	4.68
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Treatment	.86	2	.43	.10	.904
Error	722.67	170	4.25		
Total	723.53	172	4.21		

**NON-US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	2.23	4.33	2.09
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Treatment	179.79	2	89.90	38.58	.000*
Error	396.06	170	2.33		
Total	575.85	172	3.35		

\*p < .05

Table 58 shows a main effect for treatment on purchasing intentions for non-US foods. There is no significant main effect for US foods.

Next, analyses included as covariates the interaction between the four attitudinal factors and social distance. The results in Table 59 yield no mediating effect for non-US foods, because significances for the treatment effect did not vanish after controlling for the interaction terms. There were no significant results for US foods. Therefore, the mediating effect hypothesized in H7c is not supported.

Table 59. Multivariate Analysis of Covariance for Treatment Conditions on Purchasing Intentions for US and Non-US Foods

**US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	4.52	4.55	4.68
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Covariates	34.91	4	8.73	2.11	.082
Treatment	.68	2	.34	.08	.921
Error	687.77	166	4.14		
Total	723.36	172	4.21		

**NON-US FOODS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	2.23	4.33	2.09
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Covariates	9.19	4	2.30	.99	.417
Treatment	177.55	2	88.78	38.09	.000*
Error	386.88	166	2.33		
Total	573.62	172	3.34		

Table 60 summarizes the results for the three subhypotheses of H7. Contrary to expectations, when the interaction terms were included as covariates, the F-values did not decrease and become nonsignificant. On the contrary, the main effect became stronger for food preferences and consumption intentions; it decreased slightly (by .49) for purchasing intentions but did not lose its significance. Therefore, the mediating role hypothesized in H7 is not supported.

Table 60. Effects of Covariates on the F-Ratio for the Main Effect of Type of Food Advertising (US vs. Non-US)

<u>Outcome Variable</u>	<u>No Covariates</u>	<u>Covariates</u>
<u>Food Preferences</u>		
US Foods	14.92*	16.32*
Non-US Foods	2.98	2.74
<u>Consumption Intentions</u>		
US Foods	1.68	1.40
Non-US Foods	44.51*	45.28*
<u>Purchasing Intentions</u>		
US Foods	.10	.08
Non-US Foods	38.58*	38.09*

-----  
 \*p < .05

NOTE: Covariates consist of the interaction between more favorable attitudes towards food commercials and a closer social distance.  
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### Test of the Model

The model of the Consumer Socialization of Teenagers in Puerto Rico in the Area of Foods (page 25) looks at the mediation or non-mediation of attitudes towards food commercials on food preferences and behavioral intentions (consumption and purchasing intentions). Some researchers argue for the mediating role of attitudes towards commercials. The non-mediation loop is based on Krugman's low involvement learning model which argues that preferences and behavioral intentions can be manifested regardless of attitudes towards commercials.

The loop corresponding to the mediating effect of the interaction between favorable attitudes towards commercials and a closer social distance on preferences, consumption and

purchasing intentions for US foods was already discussed under H7. Therefore, this section will address the remaining two loops in the model. The structure of the Outcome Variables, exposed versus not exposed, will be used to test the remaining part of the model.

Multivariate analysis of covariance was used to test whether there is a mediating role by attitudes towards commercials. The effects in the multivariate analyses were tested by means of F tests based on the Mean Square error term (Keppel, 1982). This section will end with a summary table comparing the F-ratios with and without covariates (see Table 64). The criterion for statistical significance was set at alpha .05. Multivariate procedures were used because the three outcome variables were significantly correlated (see Table 61).

Table 61. Partial Correlations Between the Outcome Variables Controlling for Treatment Condition

	Food Preferences	Consumption Intentions	Purchasing Intentions
Food Preferences	1.000	.488*	.497*
Consumption Intentions		1.000	.766*
Purchasing Intentions			1.000

-----  
\*p < .001

The four attitudinal factors (entertaining, personal relevance, dislike, and warm) were used as covariates to allow for statistical adjustment in the outcome variables. In this procedure, variation in the outcome variables is removed, and a conventional multivariate analysis of variance is performed on the corrected scores.

If these attitudinal factors are mediators of the outcome variables, including them as covariates should reduce the main effect of the treatment, type of food advertising, to a nonsignificant level. However, if a significant preference, consumption intention, or purchasing intention remains after statistical removal of the presumed mediating effect, then these attitudinal factors may not be the only mediators of the outcome variables.

Table 62 presents the analyses of variance without extracting the attitudinal factors, and Table 63 shows the analyses of covariance.

Table 62. Multivariate Analysis of Variance for Treatment Conditions on Food Preferences, Consumption Intentions, and Purchasing Intentions

**FOOD PREFERENCES**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	4.50	4.02	4.53
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Treatment	9.28	2	4.64	2.50	.085
Error	313.57	169	1.86		
Total	322.85	171	1.89		

**CONSUMPTION INTENTIONS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	3.60	4.82	4.88
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Treatment	59.55	2	29.78	15.43	.000*
Error	325.62	169	1.93		
Total	385.17	171	2.25		

**PURCHASING INTENTIONS**

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>
Means	3.38	4.39	4.68
n	58	56	59

<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Treatment	53.67	2	26.84	10.91	.000*
Error	415.26	169	2.46		
Total	468.93	171	2.74		

\*p < .05

Table 62 shows a main effect for treatment on both consumption and purchasing intentions. There is no significant main effect for food preferences.

Next, analyses included the attitudinal factors as covariates. The results in Table 63 yield no mediating effect for the outcome variables, because significances for

the treatment effects on consumption and purchasing intentions did not vanish after adjusting for the effects of the attitudinal factors. Treatment effects were not significant for food preferences. Therefore, the part of the model positing a mediating effect of attitudes towards food commercials is not supported.

Table 63. Multivariate Analysis of Covariance for Treatment Conditions on Food Preferences, Consumption Intentions, and Purchasing Intentions

#### FOOD PREFERENCES

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>		
Means	4.52	3.99	4.58		
n	56	55	57		
<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Covariates	36.38	4	9.10	5.52	.000*
Treatment	8.11	2	4.06	2.46	.089
Error	265.19	161	1.65		
Total	309.68	167	1.85		

#### CONSUMPTION INTENTIONS

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>		
Means	3.64	4.78	4.89		
n	56	55	57		
<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Covariates	32.36	4	8.09	4.73	.001*
Treatment	52.51	2	26.26	15.36	.000*
Error	274.50	161	1.71		
Total	359.37	167	2.15		

#### PURCHASING INTENTIONS

	<u>Low-Nutrition</u>	<u>Pro-Nutrition</u>	<u>Combination</u>		
Means	3.41	4.34	4.72		
n	56	55	57		
<u>SOURCE OF VARIANCE</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Covariates	50.90	4	12.73	5.87	.000*
Treatment	45.58	2	22.79	10.50	.000*
Error	349.00	161	2.17		
Total	445.48	167	2.67		

\*p < .05



Table 64 summarizes the tests for the mediating role of the attitudinal factors on the three outcome variables. Contrary to expectations, when the attitudinal factors were included as covariates, the F-values for consumption and purchasing intentions decreased slightly, but did not become nonsignificant; there were no significant F values for food preferences. The slight reduction in the F-ratio for consumption and purchasing intentions suggests that attitudes towards commercials have a contribution on the outcome variables, but they may not be the only mediators. At this point, because no other mediating variables were hypothesized, the direct link supporting Krugman's low involvement learning model is supported, that is, behavioral intentions may be manifested regardless of attitudes towards commercials. Therefore, the mediating role hypothesized in the model is not supported.

Table 64. Effects of Covariates on the F-Ratio for the Main Effect of Type of Food Advertising

<u>Outcome Variable</u>	<u>No Covariates</u>	<u>Covariates</u>
Food Preferences	2.50	2.46
Consumption Intentions	15.43*	15.36*
Purchasing Intentions	10.91*	10.50*

-----  
\*p < .05

## CHAPTER V

### SUMMARY AND DISCUSSION

This chapter begins by summarizing the study and its findings. Then it discusses the implications of this experiment on the consumer socialization of teenagers in Puerto Rico in the area of foods followed by the contributions and limitations of this research.

#### Summary of the Study

This investigation tested empirically the effects of television food commercials on the snacking preferences and consumption and purchasing intentions of teenagers in Puerto Rico.

The consumer socialization perspective provided the theoretical framework. This theory states that adolescents acquire consumption-related skills, attitudes, and knowledge from different socialization agents. Television has been considered a socialization agent capable of awakening and creating desires to consume advertised foods. Television has been considered an effective source in bringing about desired results in behavior patterns. The social learner was conceptualized as a maker of choices, either consciously or unconsciously.

A posttest only control group experiment with four conditions (three treatment groups and a control group) was conducted in three high schools in Puerto Rico with a total

sample of 234 subjects. Treatment One viewed food commercials for low-nutrition foods; Treatment Two viewed food commercials for pro-nutrition foods; Treatment Three viewed a combination of low- and pro-nutrition food commercials; the Control group viewed nonfood commercials. Each condition viewed, twice, four commercials which were embedded in seven vignettes videotaped from the Spanish International Network. Students were randomly assigned to four classrooms, and the four treatments were randomly assigned to the groups. Gender was fairly equally distributed in each class group. Four female experimenters were rotated across conditions for each of the three experimental days. Production quality of the commercials was controlled through a freezing-frame method synchronized with the original soundtrack. Subjects completed a questionnaire after watching the videotape. They were debriefed after the questionnaires had been collected.

### **Summary of Findings**

The findings of this experiment will be discussed in terms of the outcome variables and in terms of the consumer socialization model tested (a combination of mediation of attitudes versus Krugman's low involvement learning model). The mediating effect of attitudes towards commercials will be discussed under "Test of the Model." The subdivision of "Outcome Variables" will address the general question that motivated this investigation: Does exposure to television food commercials produce more preference for certain types

of foods and the behavioral intentions to consume and purchase these foods?

### **Outcome Variables**

Several hypothesized relationships were supported regarding the outcome variables--food preferences, consumption intentions, and purchasing intentions. Each of these outcome variables had two modes depending on the hypothesis being tested: exposed vs. not exposed, similar vs. dissimilar nutritional levels, and advertised US vs. non-US foods. These breakdowns of the outcome variables will facilitate the discussion of the results.

### **Exposed vs. Not Exposed**

Those exposed to a combination of low- and pro-nutrition foods consistently preferred and intended to consume and buy foods they saw in the commercials.

Those exposed to low-nutrition foods preferred foods they saw (although  $p < .05$ ), but did not intend to consume or buy these foods. These relationships show that even though teenagers may have a preference for low-nutrition foods, that does not necessarily mean that they intend to consume or buy them. There could be two alternative explanations. Either those exposed to low-nutrition foods are more attracted to pro-nutrition foods, or they just have preferences and behavioral intentions for other types of low-nutrition foods. The most plausible explanation seems to be the latter as the next section (Similar vs. Dissimilar

Nutritional Levels) shows more consumption and purchasing intention for low-nutrition foods similar to the ones seen.

The reverse occurred for those exposed to pro-nutrition foods; they did not prefer the foods they saw, but they did intend to consume and purchase them. The pro-nutrition commercials apparently were not effective in producing preferences for those foods. Increasing awareness about health issues could explain why they intend to consume and purchase foods that are good for their bodies even though they are not well liked. This presents a challenge for nutritionists and advertisers of pro-nutrition foods. Food behavior is learned. Nutritionists believe that consumption of pro-nutrition foods increases if there is a liking for the food; liking increases if the food is tried several times so as to develop a taste for it (Guthrie, 1978). If teenagers are motivated to consume more pro-nutrition foods, they could eventually develop a liking for those foods.

The pro-nutrition commercials did affect consumption and purchasing intentions. Jeffrey, McLellarn, and Fox (1982) found that pro-nutrition commercials were ineffective in increasing the actual consumption of pro-nutrition foods in children. They justified their nonfinding by differences in budget allocations for the production of low- and pro-nutrition advertising. In this investigation, this extraneous variable was controlled for by standardizing the production quality of the commercials. Although only consumption intentions were assessed, this study found that

those exposed to pro-nutrition foods intended to consume those foods within the next week. Jeffrey, et. al., dealt with children, but as McLeod and O'Keefe (1972) point out "new behavior patterns emerge at all stages of development" (p. 129). This provides some hope to the idea that good eating habits could be promoted and encouraged throughout a person's lifetime.

### **Similar vs. Dissimilar Nutritional Levels**

Those exposed to low-nutrition foods intended to consume and buy foods similar in nutritional value to the ones seen in the commercials. But in terms of preference, they preferred dissimilar foods (or of the opposite nutritional level which means pro-nutrition foods), contrary to expectations. As compared to the findings under "Exposed vs. Not Exposed," apparently they intend more so to consume or buy low-nutrition foods different from the ones seen. These findings indicate that advertising of low-nutrition foods can stimulate the consumption of other brands within the same nutritional category.

Those exposed to pro-nutrition foods preferred (although  $p < .05$ ) and intended to consume and buy low-nutrition foods. Therefore, exposure to pro-nutrition foods did not have an effect in food preferences, consumption and purchasing intentions for pro-nutrition foods similar to the ones they saw advertised. But as seen in the previous section, they do intend to consume and buy the pro-nutrition foods they saw advertised. These findings do not support

the expectations that advertising can stimulate consumption of foods similar in pro-nutrition value.

### **Advertised US vs. Non-US Foods**

Much has been written about the Americanization of Puerto Ricans. The omnipresence of the U.S. in the lives of Puerto Ricans since 1898 cannot go unnoticed. The American television culture is transferred through television programs and commercials transmitted through the local TV channels (dubbed into Spanish) or through the cable system.

Bogardus' index of social distance was used to tap Puerto Rican teenagers' perceptions of closeness with Americans. This index elicited a short social distance confirming expectations of closeness. If attitudes towards commercials are a mediator of food preferences and consumption and purchasing intentions, then an interaction with social distance ought to produce more preference and more intentions to consume and purchase foods from US origin. But this interaction did not mediate any of the hypothesized relations.

However, a multivariate analysis of variance found that teenagers exposed to low-nutrition foods, solely or in combination with pro-nutrition foods, had more preference for US foods than for non-US foods they saw advertised. Those exposed to the pro-nutrition US food expressed more preference for non-US foods. Subjects in all three conditions that viewed food commercials expressed an

intention to consume and purchase US foods more than non-US foods for which they saw commercials.

The commercials were effective in producing more preference for US foods, and less intentions to consume and purchase non-US foods, but this effect was not mediated by the interaction between attitudes towards commercials and social distance.

### **Group Comparisons**

None of the hypothesized contrasts was significant. Responses to food are second nature to human beings, therefore it should be a large effect. If it were a large effect, it should have been found by a sample of 234 subjects. But the preferences and behavioral intentions for a predetermined set of products may have been a small effect which would have required a much larger sample per condition. Nevertheless, several relationships did follow the expected directions. Even though at this point there is no statistical evidence to indicate that results are not a result of chance fluctuations, the unconfirmed expected directions are encouraging for further research. Among the unsupported relations which followed the expected directions were: those exposed to low-nutrition foods preferred these foods and intended to buy them more as compared to those exposed to pro-nutrition foods or to nonfood commercials; those exposed to pro-nutrition foods preferred similar pro-nutrition foods more than those exposed to low-nutrition foods or to nonfood commercials; those exposed to pro-



nutrition foods intended to consume these foods, and they also intended to consume similar pro-nutrition foods. These unsupported expectations should be further studied because they have implications for the overall health of our future adult population.

### **Test of the Model**

This study looked at the consumer socialization of teenagers in Puerto Rico, in particular, at the role of television food commercials in influencing food preferences and behavioral intentions (consumption and purchasing intentions).

Two models were combined into a "Consumer Socialization Model of Teenagers in Puerto Rico in the Area of Foods" to test the mediating effect of attitudes towards commercials on the outcome variables. Communication, advertising, and marketing research consider attitudes towards commercials as an important mediating variable between exposure to advertising and food preferences and behavioral intentions. In particular, advertising research has found the construct attitudes towards advertisement to mediate brand attitudes and purchasing intentions. Given this prevalence of attitudes towards commercials as a mediating variable and the much talked about Americanization of Puerto Ricans, it was also hypothesized that the interaction of these two variables would mediate the effect on the outcome variables.

As an alternative explanation, Krugman's low involvement learning model was sought to help elucidate why

adolescents learn about brands and products even though they dislike television commercials in general. Krugman's model argues that behavior may be manifested without the development of positive attitudes towards commercials.

The mediating roles were tested using multivariate analysis of covariance. None of the mediating relationships were supported. Significant main effects did not vanish after controlling for the effect of the mediating variables. Because alternative mediating variables were not hypothesized, at this point, this study supports Krugman's thesis. Apparently, food preferences, consumption and purchasing intentions can occur without the development of positive attitudes towards commercials.

Likewise, the interaction of attitudes towards commercials and social distance did not mediate food preferences and behavioral intentions. The lack of mediation by this interaction could have been due to various reasons. First, the population of interest consists of adolescents who were born into a social system highly influenced by the 89 years of US-PR ties. American lifestyle is commonplace. Second, the sample was drawn from Catholic schools which are believed to be Americanized (Beirne, 1975). Third, even though the products advertised were American, the commercials were produced in Puerto Rico. Thus, the models, background, and setting were local which may account for the failure to find significances related to Americanization.

Food is a pervasive commodity and this area is considered one of low involvement because there is less risk involved in preferences and in consumption and purchasing situations. A lower-risk product has a lighter penalty for a mistake, and less anxiety about the outcome. As Krugman (1964) suggests, television commercials may be altering people's perceptual structure such that they develop preferences and behavioral intentions for particular foods without necessarily developing an attitude towards the commercials. He argues that behaviors are activated by choice situations, that is, when an advertised brand is seen, it is recognized and purchased many times on a trial basis. Short of being able to assess actual behaviors, intentions to consume or buy certain food products were measured. The questionnaire items may have served to activate (in Krugman's terms) behavioral-choice situations which were manifested in their responses.

The overall lack of mediation by attitudes towards commercials may indicate that socialization processes have successfully done their work by the time children reach their middle adolescent stage. Considering that the stimulus material used was derived from television commercials for existing brands, teenagers may have already tried them and have developed attitudes towards these products. In theory, randomization should have taken care of balancing out these predispositions across the four conditions. Yet it is possible that, through their early

socialization, they have overlearned and retained information about the advertised products affecting their choices.

### **Contributions**

One of the principal motives propelling this study was the increasing concern from different academic and health circles about the consumption patterns that are developed during childhood and adolescence, because they are believed to carry on to adulthood. What is learned during childhood and adolescence has implications for adulthood.

Extensive research with children less than 12 years of age has documented the influence of television commercials on their knowledge, attitudes, and behaviors. The result has been the notion that advertising is a shaper of consumer behavior. It can create desires for expensive or unhealthy products.

There is no question about the fact that teenagers like low-nutrition foods and that they intend to consume and buy them. The reduction or elimination of this type of advertising is unthinkable considering the large revenues generated by these types of commercials. If continuous exposure to these types of foods is likely to produce preferences and behaviors detrimental to the overall health of individuals when consumed in excess and in lieu of essential nutrients, the question is how to counteract these messages.

Perhaps one solution would be to upgrade the production quality of pro-nutrition commercials and increase their repetition during peak hours of adolescent viewing so that they become competitive with the low-nutrition commercials. Any pro-nutrition message aired on television must compete with other commercials for viewer's attention. Therefore, they must be comparable in technical and creative quality as well as in interest and variety. Of course, this entails a larger budget allocation to the production of pro-nutrition commercials. Standardizing production quality in this experiment showed that those exposed to pro-nutrition commercials intended to consume and buy these foods. This would be a step in the right direction to get people, at an earlier stage of development, to acquire consumer behavior more instrumental to their lifetime health.

Undertaking this research provided important contributions in terms of design. Studies on adolescent consumer socialization have generally been surveys, and when experiments have been conducted, intact groups have been used. This investigation demonstrated that it is possible to conduct experiments with randomization in high schools in Puerto Rico to allow causal inferences. This process, though, requires the use of persuasive strategies to enlist the support of high school principals. Their main concern is the disruption of the class day. Therefore, it is important to plan the experimentation days to the last

detail. This study was extremely successful in the design and data collection phases.

In terms of research activities in Puerto Rico, this was the first experiment of its kind. Mass media channels continue to spread throughout the Island, but no formal research has begun on the consumer socialization of its adolescents. Further research can build on these experiences and try to reveal the effects of television on food preferences and behavioral intentions.

### **Limitations**

There were two main limitations in this study. One related to effect size and the other to similarities of interpretation among the outcome variables. There were approximately 59 subjects per condition, which is adequate for a medium to large effect size and a power above .90 (Cohen & Cohen, 1975). However, this may have not been enough to test the hypothesized relations which sought a small effect of preferences and behavioral intentions for a predetermined set of products.

Three high schools were selected from three regions in the San Juan Metropolitan area. Obtaining permission of high school principals to use their schools and, moreover, to allow randomization was not an easy task. Including more high schools could have increased the variability. However, the time and costs involved did not allow the inclusion of more schools.

The second weakness relates to the high correlation between the outcome variables (see Table 61). Although food preferences, consumption intentions, and purchasing intentions were clearly conceptualized as different constructs (refer to page 28), the high correlation among them may indicate gradients of liking and commitment to the particular food. Food preferences are attitudes and were operationalized as liking for the food products such that subjects would want to have them right then. Consumption and purchasing intentions are behavioral tendencies that referred to the likelihood that teenagers would intend to consume or purchase particular food products within the next week. There is an implied liking, because following up on nutrition research (see for example, Guthrie, 1978), consumption increases if there is a liking for the particular food. Consumption and purchasing intentions measure different levels of commitment. Purchasing intentions denote a stronger commitment of teenagers as consumers willing to spend their money on particular foods.

### **Suggestions for Future Research**

Even though, in theory, randomization should have balanced the experimental conditions, because of the pervasive nature of foods and the effects of other socialization agents, future research should consider doing a pretest on the outcome variables a couple of weeks prior to exposure to the stimulus material in a Solomon four-group

design because the interaction between testing and the treatment is a probable validity threat.

This researcher strongly believes that consumer socialization in the area of foods is not completed by adolescence. To support this, future research could make new commercials for new brands of foods as the stimulus material, and study their effects at more than one point in time with direct measures of actual food consumption.

If we can assume that socialization processes regarding food have been successful by adolescence, then further research should focus on modification of existing attitudes and behaviors. The concern is still present regarding the selection of low-nutrition foods and its implications on the overall health of the individual. Television should be a more educational medium in matters pertaining to food selection. Tastes and preferences apparently get in the way of good nutrition. Therefore, pro-nutrition commercials should appeal to tastes and preferences implying good nutrition knowledge.

Using experimental stimuli, adolescents could be taught how to resist the temptation of selecting high sugar, high fat, high sodium foods. Their critical television viewing skills could be improved to counteract undesirable influences of television commercials on preferences and behaviors. They could be "resocialized" towards new eating habits that would lead to a healthier adult.



Rather than telling them what they must or should eat, teenagers should be encouraged to practice self-discipline and to make responsible choices. Snacking is a characteristic food habit in adolescence which can either contribute to dietary deficiencies or add to total nutrient intake. Consumption of enough calories is not equal to intake of necessary proportions of protein, vitamins, and minerals. The goal should be responsible choice making based on adequate knowledge.

Teens want facts but they do not like to be patronized (Kreutler, 1980). Information should then be presented in a factual, interesting, and nonpatronizing way. Teens want to know more about their bodies and what their bodies need to function properly.

Previous research using existing commercials to test effects of pro-nutrition commercials on consumption behaviors explained their failure to find significances on differences in production quality and budget allocations (Jeffrey, McLellarn, & Fox, 1982). This experiment standardized production quality and found effects of pro-nutrition commercials on consumption and purchasing intentions. A sequel to this investigation would be to conduct an experiment where both the original commercials and the standardized versions are used. This new study could further show if differences in production quality of low- and pro-nutrition commercials account for changes in food preferences and behaviors.

Nowadays, advertising has been turning its attention to children and adolescents because they influence household buying. Adolescents are often more independent with more money to spend. They constitute a large specialized market segment. From a marketing perspective, adolescents as consumers can influence the marketplace as buyers spending their allowances, gifts, and any income derived from part-time jobs on personal consumption. Furthermore, they represent the prototype of the future adult market.

Future research can explore the influence of adolescents on where a family eats, which food they buy, and other food-related behaviors. This research will most likely reinforce the role of adolescents in consumer decisions. Advertisers can benefit from these results to launch advertising campaigns directed at adolescents. From a nutrition perspective, this influence becomes critical not only for the health of the adolescent but of the household. It would be advisable for advertisers to work in conjunction with nutritionists, because sales and revenues should not increase at the expense of people's health and sound nutrition practices. Nutritionists could advise advertisers on what to say so they convey accurate nutrition information to consumers, and advertisers would know how to say it effectively. This collaboration may present a problem, though, because nutritionists "want to promote diversity, substitution rather than brand loyalty, and moderation rather than quantity" (Guthrie, 1978, P. 58). However, the

expertise of both parties is indispensable if one considers that "shoppers' choices are made primarily on the basis of four concerns: knowledge (do I think this is nutritious?); attitudes (do I feel like eating it?); practicality (can I afford it?); and timing (should I buy it now?)" (Kreutler, 1980, p. 436).

Information alone is usually insufficient to promote and maintain healthy dietary practices. However, accepted behavior patterns expressed in the media are steps towards promoting good nutrition practices.

## APPENDICES

## APPENDIX A

### Questionnaire in English

We are interested in getting your reaction to the videotape you are about to see. Keep in mind that we are interested in your opinions. We do not want you to tell us what you think we want to hear or what your friends think or anyone else. So please do not discuss the program or your answers with the people around you.

All responses are completely confidential. Make sure you write your answers clearly in the space provided on your questionnaire. Do not go back and change any of your answers.

If any of the questions are unclear to you, raise your hand and you will be assisted.

ENJOY THE SHOW.

School: \_\_\_\_\_

Room No.: \_\_\_\_\_

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

Thank you for watching the videotape. Please answer the following questions about the program. [Circle your answers.]

1) How much did you enjoy each vignette?

	Very much	Much	Not very much	Not at all
<b><u>Chronicles:</u></b>				
The Moon	4	3	2	1
Elvis Presley	4	3	2	1
<b><u>Lo Nuestro:</u></b>				
Congress Library	4	3	2	1
Carlos Fuentes (writer)	4	3	2	1
Adolfo Perez Esquivel (Nobel Peace Price)	4	3	2	1
Rita Moreno	4	3	2	1
Roberto Clemente (baseball)	4	3	2	1

2) How much would you like to see vignettes like these on local television programming? [Circle your answer.]

Very much    Much    Not very much    Not at all

3) Would you recommend these vignettes to your friends?  
[Circle your answer.]

Yes                      No

We would also like to get your reactions to the four commercials you just saw.

[ATTITUDES TOWARDS COMMERCIALS]

One of the commercials you saw was for \_\_\_\_\_.

[THERE WERE FOUR PAGES -- ONE FOR EACH COMMERCIAL. THE ADJECTIVES WERE ARRANGED IN ALPHABETICAL ORDER.]

Please tell how well you think each of these words describes this commercial by putting a number to the left of the word. If you feel the word fits

extremely well.....put a 5  
 very well.....put a 4  
 fairly well.....put a 3  
 not very well.....put a 2  
 not well at all....put a 1

on the line to the left of the word.

[ENTERTAINING]

\_\_\_\_\_ Clever  
 \_\_\_\_\_ Imaginative  
 \_\_\_\_\_ Amusing  
 \_\_\_\_\_ Original  
 \_\_\_\_\_ Uninteresting  
 \_\_\_\_\_ Lively  
 \_\_\_\_\_ Dull  
 \_\_\_\_\_ Easy to forget

[DISLIKE]

\_\_\_\_\_ Irritating  
 \_\_\_\_\_ Silly  
 \_\_\_\_\_ Pointless  
 \_\_\_\_\_ Phony

[PERSONAL RELEVANCE]

\_\_\_\_\_ Worth remembering  
 \_\_\_\_\_ Convincing  
 \_\_\_\_\_ Effective  
 \_\_\_\_\_ Informative  
 \_\_\_\_\_ Interesting

[WARM]

\_\_\_\_\_ Appealing  
 \_\_\_\_\_ Gentle  
 \_\_\_\_\_ Well done







[NONFOODS-control]

Crest

\_\_\_\_\_

Zest

\_\_\_\_\_

Ivory soap

\_\_\_\_\_

Sutton musk deodorant

\_\_\_\_\_



[NONFOODS-control]

Crest

\_\_\_\_\_

Zest

\_\_\_\_\_

Ivory soap

\_\_\_\_\_

Sutton musk deodorant

\_\_\_\_\_



## [GENERAL TELEVISION EXPOSURE]

Now, I have a few more questions about television.

On a typical school day, how many hours do you watch television...

before going to school? \_\_\_\_\_ hours

after school, and before dinner? \_\_\_\_\_ hours

after dinner, before you go to bed? \_\_\_\_\_ hours

During a typical weekend, how many hours do you watch television on...

Saturday morning? \_\_\_\_\_ hours

Saturday afternoon? \_\_\_\_\_ hours

Saturday evening? \_\_\_\_\_ hours

Sunday morning? \_\_\_\_\_ hours

Sunday afternoon? \_\_\_\_\_ hours

Sunday evening? \_\_\_\_\_ hours

## [GENERAL EXPOSURE TO TELEVISION COMMERCIALS]

When you are watching television and commercials come on,  
how often do you...

[Please write an "X" in the space provided.]

	Never 1	2	3	4	Very often 5
watch the commercials?	_____	_____	_____	_____	_____
switch channels?	_____	_____	_____	_____	_____
leave the room, and do not listen to commercials?	_____	_____	_____	_____	_____
leave the room, but listen to commercials?	_____	_____	_____	_____	_____
do other activities in the room, but do not watch the commercials?	_____	_____	_____	_____	_____
do other activities in the room, but do not listen to the commercials?	_____	_____	_____	_____	_____

## [BOGARDUS' SOCIAL-DISTANCE SCALE]

Now, I would like to know what do you think of Americans as a cultural group.

[In the table below,

1. Give your **first feeling reactions** in every case.
2. Give your reactions to Americans as a **group**. Do not give your reactions to the best or to the worst members that you have known, but think of the picture or stereotype that you have of Americans.
3. Put an "X" in as many of the seven rows as your feelings dictate.]

I would accept Americans...

- \_\_\_\_\_ 1. To close kinship by marriage.
  - \_\_\_\_\_ 2. To my club as personal chums.
  - \_\_\_\_\_ 3. To my street as neighbors.
  - \_\_\_\_\_ 4. As students in my school.
  - \_\_\_\_\_ 5. To citizenship in my country.
  - \_\_\_\_\_ 6. As visitors only to my country.
  - \_\_\_\_\_ 7. I would exclude Americans from my country.
- 

## [DEMOGRAPHICS]

Finally, just a few more questions about yourself.

Grade level: \_\_\_\_\_

Age: \_\_\_\_\_ years old

Gender: \_\_\_\_\_ 1. Male

\_\_\_\_\_ 2. Female

THANK YOU VERY MUCH FOR YOUR COOPERATION.



## APPENDIX B

### Questionnaire in Spanish

Estamos interesados en conocer tus opiniones sobre el programa que vas a ver. El programa consiste de varias viñetas o reseñas. El proposito es saber cuanto te gustaria ver este tipo de viñeta en la programacion local de television.

Lo que nos interesa es **TU** opinion. No queremos que nos digas lo que tu crees que nos interesa saber o lo que tus amistades piensan, o lo que piensa cualquier otra persona. De manera que, por favor, no discutas el programa o tus contestaciones con las personas que estan a tu alrededor.

Todas las respuestas son confidenciales. Para cada pregunta, marca la contestacion que mejor refleje tu opinion. Asegurate de escribir tus respuestas claramente en el espacio indicado en tu cuestionario. Una vez que contestes una pregunta, **NO** regreses a ella para cambiar tu respuesta. Favor de contestar el cuestionario en su totalidad.

Si tienes duda con respecto a alguna pregunta, levanta tu mano y una persona te aclarara la misma.

Te agradecemos sinceramente tu valiosa contribucion a este estudio.

DISFRUTA EL PROGRAMA.

Nombre de tu escuela: \_\_\_\_\_

Numero del salon: \_\_\_\_\_

VIRA LA PAGINA AL FINALIZAR EL PROGRAMA.

Gracias por ver el programa. Favor de contestar las siguientes preguntas sobre el programa. [Circula el número que mejor represente tu opinión.]

1) Cuanto te gusto cada viñeta que vistes?

	Muchisimo	Mucho	No mucho	No me gusto nada
<b><u>Cronicas del s. XX:</u></b>				
La Luna	4	3	2	1
Poliomielitis	4	3	2	1

**Lo Nuestro:**

Biblioteca del Congreso	4	3	2	1
Carlos Fuentes (escritor novelas)	4	3	2	1
Adolfo Perez Esquivel (Premio Nobel de la Paz)	4	3	2	1
Rita Moreno	4	3	2	1
Roberto Clemente	4	3	2	1

2) Cuanto te gustaria ver viñetas como estas en la programacion local de television? [Circula tu respuesta.]

Muchisimo      Mucho      No mucho      No me gustaria

3) Recomendarias estas viñetas a tus amistades? [Circula tu respuesta.]

Si                      No

Ademas, nos gustaria conocer tu opinion sobre los cuatro comerciales que vistes.

Favor de indicar cuan bien cada uno de los adjetivos que aparece a continuacion **describe** cada comercial escribiendo un numero al lado izquierdo de cada adjetivo. Si piensas que el adjetivo describe el comercial

extremadamente bien.....escribe un 5  
 muy bien.....escribe un 4  
 relativamente bien.....escribe un 3  
 no muy bien.....escribe un 2  
 nada bien.... .....escribe un 1

en el espacio a la izquierda del adjetivo.

**Uno de los comerciales que vistes fue sobre \_\_\_\_\_.**

_____ Aburrido	_____ Imaginativo
_____ Animado	_____ Informativo
_____ Atrayente	_____ Ingenioso
_____ Bien hecho	_____ Interesante
_____ Con tacto	_____ Irritante
_____ Convincente	_____ Original
_____ Efectivo	_____ Sin interes
_____ Engañoso	_____ Sin sentido (absurdo)
_____ Entretenido	_____ Tonto
_____ Facil de olvidar	_____ Vale la pena recordar

**El otro comercial que viste fue sobre \_\_\_\_\_.**

Si piensas que el adjetivo describe el comercial

extremadamente bien.....escribe un 5  
 muy bien.....escribe un 4  
 relativamente bien.....escribe un 3  
 no muy bien.....escribe un 2  
 nada bien.... .....escribe un 1

en el espacio a la izquierda del adjetivo.

_____ Aburrido	_____ Imaginativo
_____ Animado	_____ Informativo
_____ Atrayente	_____ Ingenioso
_____ Bien hecho	_____ Interesante
_____ Con tacto	_____ Irritante
_____ Convincente	_____ Original
_____ Efectivo	_____ Sin interes
_____ Engañoso	_____ Sin sentido (absurdo)
_____ Entretenido	_____ Tonto
_____ Facil de olvidar	_____ Vale la pena recordar

Otro comercial que viste fue sobre \_\_\_\_\_.

Si piensas que el adjetivo describe el comercial

extremadamente bien.....escribe un 5  
 muy bien.....escribe un 4  
 relativamente bien.....escribe un 3  
 no muy bien.....escribe un 2  
 nada bien.... .....escribe un 1

en el espacio a la izquierda del adjetivo.

_____ Aburrido	_____ Imaginativo
_____ Animado	_____ Informativo
_____ Atrayente	_____ Ingenioso
_____ Bien hecho	_____ Interesante
_____ Con tacto	_____ Irritante
_____ Convincente	_____ Original
_____ Efectivo	_____ Sin interes
_____ Engañoso	_____ Sin sentido (absurdo)
_____ Entretenido	_____ Tonto
_____ Facil de olvidar	_____ Vale la pena recordar

**Y el otro comercial que viste fue sobre \_\_\_\_\_.**

Si piensas que el adjetivo describe el comercial

extremadamente bien.....escribe un 5  
 muy bien.....escribe un 4  
 relativamente bien.....escribe un 3  
 no muy bien.....escribe un 2  
 nada bien.....escribe un 1

en el espacio a la izquierda del adjetivo.

_____ Aburrido	_____ Imaginativo
_____ Animado	_____ Informativo
_____ Atrayente	_____ Ingenioso
_____ Bien hecho	_____ Interesante
_____ Con tacto	_____ Irritante
_____ Convincente	_____ Original
_____ Efectivo	_____ Sin interes
_____ Engañoso	_____ Sin sentido (absurdo)
_____ Entretenido	_____ Tonto
_____ Facil de olvidar	_____ Vale la pena recordar

	No lo	Lo
	preferiria	preferiria
	1	7
Coca Cola	_____	_____
otro refresco	_____	_____
cualquier dulce	_____	_____
chocolates Mon Cheri	_____	_____
chocolates Hershey	_____	_____
otro tipo de chocolate	_____	_____
Papitas, Fritos, etc.	_____	_____
galletitas Disco	_____	_____
otro tipo de galletita	_____	_____
leche	_____	_____
mantecado	_____	_____
queso Kraft	_____	_____
otro tipo de queso	_____	_____
alguna fruta	_____	_____
algun vegetal como zanahorias, etc.	_____	_____
jugo de piña Lotus	_____	_____
cualquier otro jugo	_____	_____
Pan Pepin	_____	_____
otro tipo de pan	_____	_____

Cual es la probabilidad de que tu uses algunos de los siguientes productos en la proxima semana?

[Escribe una "X" en el espacio que mejor represente esta probabilidad.]

	Improbable				Probable		
	1	2	3	4	5	6	7
Coca Cola							
otro refresco							
cualquier dulce							
chocolates Mon Cheri							
chocolates Hershey							
otro tipo de chocolate							
Papitas, Fritos, etc.							
galletitas Disco							
otro tipo de galletita							
leche							
mantecado							
queso Kraft							
otro tipo de queso							
alguna fruta							
algun vegetal como zanahorias, etc.							
jugo de piña Lotus							
cualquier otro jugo							
Pan Pepin							
otro tipo de pan							
pasta Crest							
jabon Zest							
jabon Ivory							
desodorante Sutton musk							



Cual es la probabilidad de que tu compres algunos de los siguientes productos en la proxima semana?

[Escribe una "X" en el espacio que mejor represente esta probabilidad.]

	Improbable			Probable			
	1	2	3	4	5	6	7
Coca Cola							
otro refresco							
cualquier dulce							
chocolates Mon Cheri							
chocolates Hershey							
otro tipo de chocolate							
Papitas, Fritos, etc.							
galletitas Disco							
otro tipo de galletita							
leche							
mantecado							
queso Kraft							
otro tipo de queso							
alguna fruta							
algun vegetal como zanahorias, etc.							
jugo de piña Lotus							
cualquier otro jugo							
Pan Pepin							
otro tipo de pan							
pasta Crest							
jabon Zest							
jabon Ivory							
desodorante Sutton musk							

[illegible]

Ahora tenemos algunas preguntas sobre la television.

En un día escolar, cuantas horas ves television...

antes de ir a la escuela? \_\_\_\_\_ horas

despues de la escuela, antes de la cena? \_\_\_\_\_ horas

despues de la cena, antes de acostarte? \_\_\_\_\_ horas

Durante el fin de semana, cuantas horas ves television...

Sabado en la mañana? \_\_\_\_\_ horas

Sabado en la tarde? \_\_\_\_\_ horas

Sabado en la noche? \_\_\_\_\_ horas

Domingo en la mañana? \_\_\_\_\_ horas

Domingo en la tarde? \_\_\_\_\_ horas

Domingo en la noche? \_\_\_\_\_ horas

Cuando estas viendo television y aparecen comerciales, cuan  
a menudo tu...

[Escribe una "X" en el espacio correspondiente.]

	Nunca 1	2	3	4	Muy a Menudo 5
ves los comerciales?	_____	_____	_____	_____	_____
cambias de canal?	_____	_____	_____	_____	_____
sales del cuarto o sala y no escuchas los comerciales?	_____	_____	_____	_____	_____
sales del cuarto o sala pero escuchas los comerciales?	_____	_____	_____	_____	_____
haces otras cosas en la sala o en el cuarto donde esta la TV, pero no ves los comerciales?	_____	_____	_____	_____	_____
haces otras cosas en la sala o en el cuarto donde esta la TV, pero no escuchas los comerciales?	_____	_____	_____	_____	_____

Ahora nos gustaria saber que piensas de los Americanos como grupo cultural.

[En las siete oraciones que aparecen a continuacion,

1. Indica tu **primera reaccion emocional** para cada caso.
2. Indica tu reaccion hacia los Americanos como **grupo**. No des tu reaccion basada en el mejor o peor Americano que hayas conocido. Piensa en la imagen general o estereotipo que tu tienes de los Americanos.
3. Escribe una "X" en la parte izquierda **solo** de las oraciones que estan de acuerdo con lo que tu sientes.]

Me gustaria tener a los Americanos...

- \_\_\_\_\_ 1. Como parte de mi familia por matrimonio.
- \_\_\_\_\_ 2. Como parte de mi club como compañeros.
- \_\_\_\_\_ 3. Como vecinos en mi calle.
- \_\_\_\_\_ 4. Como estudiantes en mi escuela.
- \_\_\_\_\_ 5. Como ciudadanos de Puerto Rico.
- \_\_\_\_\_ 6. Solamente como visitantes en Puerto Rico.
- \_\_\_\_\_ 7. No los dejaria entrar a Puerto Rico.

Finalmente, quisieramos saber algunas cosas sobre ti.

En que año de Escuela Superior estas? \_\_\_\_\_

Cual es tu edad? \_\_\_\_\_ años

Marca tu sexo: \_\_\_\_\_ 1. Masculino

\_\_\_\_\_ 2. Femenino

MUCHISIMAS GRACIAS POR TU COOPERACION EN ESTE ESTUDIO.

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