

USING ANIMATED SPOKES-CHARACTERS IN ADVERTISING TO YOUNG CHILDREN

Does Increasing Attention to Advertising Necessarily Lead to Product Preference?

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ABSTRACT: The use of animated spokes-characters in advertising to young children is a strategic communication tactic frequently examined, debated, and criticized by parents, researchers, child advocates, and government officials. Although public opinion suggests that spokes-characters influence young children's product desires, academic research has generally failed to demonstrate this effect. The present study extends previous studies examining spokes-character influence on children, and specifically examines the effects of character action and voice. Results of two studies support previous findings that although character action and voice may influence a young child's attention to an ad, character, and product recognition, and even a positive attitude toward the product, the relation between spokes-characters and a child's preference, intention, and choice of a product is uncertain.

Ongoing debate about the efficacy and ethics of advertising to children has existed since the early days of television (see Bandyopadhyay, Kindrea, and Sharp 2001 for historical overview). Proponents of child-targeted marketing and advertising argue that due to their financial power, children comprise a separate target market from adults (McNeal 1987); "children between the ages of 4 and 12 spend about \$23 billion annually" (Janet Bodnar [1999], as cited in Kendy 2003). These proponents also argue that advertising provides important product information to children, that advertising does not have a direct stimulus-response effect on behavior (Bergler 1999), and that children exposed to persuasive messages can be empowered, can develop critical evaluation skills, and may become more savvy consumers (Acuff and Reiher 1997; Guber and Berry 1993).

American children are avid consumers of media, and as a result, are exposed to a significant amount of advertising on a daily basis, much of it targeted directly at them. Between the ages of two and eleven, the average U.S. child watches an average of 21 hours of television (on-air and cable programs) per week, 81% of which is on cable television. In addition, 2 to 2.5 hours per week are spent watching videos (*TV Dimensions* 2002).

Many parents and consumer protection groups argue that advertising directed at children is dangerous and unethical

because it is deceptive and manipulative, stimulates wants, promotes consumerism and poor nutritional habits, and encourages children to nag their parents for products, creating dissention and stress in the home (Bandyopadhyay, Kindrea, and Sharp 2001; Bergler 1999). Groups such as Stop Commercial Exploitation of Children (SCEC), Commercial Alert, Alliance for Childhood, and the Center for a New American Dream advocate governmental regulations and/or bans on advertising targeted at children. Governmental agencies such as the Federal Trade Commission (FTC) and the Federal Communications Commission (FCC) typically advocate self-regulation (Furchtgott-Roth 1998), whereas organizations such as the Children's Advertising Review Unit (CARU) of the Council of Better Business Bureaus (CBBB) works with businesses to ensure that advertising directed at children is accurate and sensitive to the audience. One recent historical analysis of advertising and children suggests that the relationship between advertiser and child is more complex than society recognizes, and calls for research examining this relationship. Cross suggests that one area of needed research is an examination of the form and content of advertising directed at children (Cross 2002, p. 445).

Despite public opinion, consumer behavior researchers, across a variety of research settings, have been divided in their findings and opinions regarding this influential link between spokes-characters and children's product desires (Bahn 1986; Henke 1995; Macklin 1986; Mizerski 1995). The two studies presented in this paper contribute to the discussion in three ways: (1) by replicating and extending prior research examining the influence of spokes-characters on children's product knowledge and desires, and (2) by testing the full hierarchy

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of effects model to locate where specific relations do not hold, and (3) by specifically examining the roles of character action and speech (animation characteristics thought to increase children's attention) in child-targeted commercials. Based on previous findings, the present study contends that although character action and voice may influence a young child's attention to an ad, recognition of the character and product, and even a positive attitude toward the product, the relation between spokes-characters and a child's preference, intention, and choice of a product is uncertain.

THE CASE FOR AND AGAINST SPOKES-CHARACTER USE IN ADVERTISING TARGETED AT CHILDREN

Industry professionals often advocate the use of a spokes-character to companies marketing to young children. Acuff and Reiher (1997), who recommend using characters to attract the attention of preschool children, suggest that by two to three years old, children start to identify frequently seen characters and may begin to demonstrate desire for those characters and related products that they see on television, packaging, and in promotions. Guber and Berry (1993) propose that kids like characters they can identify with, that they can aspire to, or emulate. According to Del Vecchio (1998, p. 225), "The objective is to select an effective piece of advertising that will break through clutter, communicate the name of the brand, its key feature and benefit, and do so in a cool way that will elicit a child's request." Schneider (1989) suggests that the keys to successful character use are innovation, meticulous marketing, planning, and massive exposure.

However, there are also very strong opinions on the other side about the use of spokes-characters with young children, particularly the ethics of using such stimuli. Research has examined common parent concerns, such as whether children understand the persuasive role of a spokes-character (Quarfoth 1979), whether children understand the difference between animated and human characters (Van Auken and Lonial 1985), and whether advertising spokes-characters influence children's attitudes (Chebat et al. 1992). Twenty-five years ago, concerned about the possible ethical issues surrounding the use of advertising characters and children, the National Advertising Division (NAD) of the Council of Better Business Bureaus (CBBB) published its restrictions on placing an advertisement using a cartoon character within the same program in which the character resides (known as "host-selling"). Two years later, in 1979, the National Association of Broadcasters (NAB) issued requirements for the use of separators between programming and advertising (Adler et al. 1980).

The trend toward regulating advertising declined in the 1980s, but regained strength in the early 1990s with a focus on tobacco advertising (Cross 2002). In 1997, a lawsuit and settle-

ment between the major tobacco companies, the federal government, and several state attorneys general resulted in an agreement by the tobacco companies to not use cartoon characters in their advertising, due to the potential appeal to children ("RJR Retires 'Joe Camel,' Starts New Ad Campaign" 1997).

CONSIDERATION OF VARIOUS EFFECTS DUE TO SPOKES-CHARACTER INFLUENCE

Examining the influence of animated spokes-characters on preschoolers' product judgments requires a basic understanding of when and how children develop the cognitive abilities necessary to proceed through the entire consumer process ranging from exposure to actual choice. Stage theory suggests that preoperational children (two to seven years old) are bound by their reliance on perceptual understanding (Piaget 1951; Piaget and Inhelder 1969), so messages must be perceptually salient and relevant in order to be understandable to a young child.

Deficits in information-processing abilities are typically looked to as explanations for the differences in young children's interpretation and use of messages. Roedder suggests that "the best documented shortcoming of young children is their failure to evoke and utilize cognitive plans for storing and retrieving information" (1981, p. 145). She presents a categorization of processing deficiencies that are determined by a child's ability to use, and the actual use of, various strategies and heuristics to aid in storing information in memory. Of concern in this study, limited processors (younger than six years old) do not even have the memory strategies available for use. Even when these children learn memorization techniques, limited processors still may not use these tools appropriately, and they may use the strategies to encode incidental information to the detriment of relevant information (John 1999b; John and Sujana 1990; Roedder 1981).

Attention

Television, by its very nature, is a dynamic audiovisual medium that provides a unique opportunity for information presentation to preschoolers because of its ability to attract their attention. Communications research with children and television suggests that an audiovisual format may present a unique aspect of information presentation because of the interaction between visual and verbal display. Form variables characteristic of animation, such as visual action, fast pace, and sound effects, have consistently proven to increase attention in preschool-aged children (Alwitt et al. 1980; Fowles 1976; Hayes and Birnbaum 1980; Huston-Stein and Wright 1979; Wright and Huston 1983).

Researchers have suggested that the attention-attracting and attention-cueing ability of audiovisual information relates to the complexity of the message stimulus (Wartella and Ettema

1974; Watt and Welch 1983; Welch and Watt 1982). Visual complexity typically refers to the number of objects or movement of objects in the visual field (Alvarez et al. 1988; Huston et al. 1981; Watt and Welch 1983; Welch and Watt 1982). Auditory complexity is often conceptualized as the number of changes in the level of frequencies, as well as the number of different sounds heard on the aural channel (Thorson, Reeves, and Schleuder 1985; Watt and Welch 1983). Complex stimuli are more perceptually salient, so they break through a young child's inherent tendency toward attention inertia and increase both attention to, and retention of, information.

Animated advertising may be particularly attractive and attention getting to preschool children because the obvious action, movement, and sound effects associated with animation embody perceptual salience. This high level of perceptual salience, coupled with preschoolers' tendency to focus on only one or two predominant stimuli, may explain why an animated spokes-character associated with a product is likely to draw a preschooler's attention better than most other stimuli. Animated spokes-characters are typically large, colorful, action-oriented, and are accompanied by silly voices and sound effects. The character is often the focus of the commercial.

Recognition

One of the clear goals of advertising targeted at children is to increase brand recognition. Because of young children's limited reading abilities, cues that invoke visual brand recognition, such as a cartoon spokes-character, are essential. Research with children generally finds relatively high levels of character and product/brand recognition (Henke 1995; Mizerski 1995), and recognition ability typically increases with age.

Generally, developmental researchers assume that young children have difficulty differentiating between products and brands (Diamond 1977). Young children perceive products as holistic entities, and a brand name is often perceived as a product attribute, or synonymous with the product class. The five-year-olds in Diamond's (1977) study had difficulty understanding the concept of brand differentiation as well as brand/product differentiation. Studies have found that young children often discriminate between products on a simple heuristic of whether one particular quality (which may include brand name or character) is present or not (Rust and Hyatt 1991). In accordance with these findings, the present study uses the terms brand and product synonymously, and assumes that preschool-aged children will often confuse a cartoon spokes-character with a brand.

Association

The greatest challenges facing a company using a spokes-character are to ensure the correct association between the charac-

ter and the brand, and to instill positive brand inferences between the spokes-character and the brand. Studies have supported young children's ability to make correct character-product associations (Henke 1995; Mizerski 1995).

In addition, Bahn (1986) found that the four- and five-year-olds in his study inferred product characteristics, dependent on the character on the cereal box. The children inferred that only "kids" cereals (sugary and sweet) have cartoon characters associated with them, so any cereal not having a character on the box is assumed to be an "adult" cereal, which is healthy, not sweet, and therefore, not desired. Bahn (1986) also found that the spokes-character associated with the product influenced the four- and five-year-olds' expression of cereal preference and choice.

In a well-known and highly cited study, Fischer et al. (1991) asked three- to six-year-olds to identify a variety of brand logos and to pair the logo with its appropriate product. Association of the Old Joe character (logo used for Camel cigarettes) with a cigarette ranged from 30.4% for three-year-olds to 91.3% for six-year-olds. These researchers concluded, "by age six, Old Joe is as well recognized as Mickey Mouse" (p. 3148). They assert, "intentions are irrelevant if advertising affects what children know" (ibid.).

Liking

A child's beliefs and desires about a product (or product entity) may be moderated by the child's affective evaluation of the character (Acuff and Reiher 1997). Macklin's (1986) research with four- and five-year-olds examined the effects of the pairing of a favorable character with a product. She presented each child with a picture of a pencil (either yellow or orange) and with a picture of a Smurf character, in either simultaneous (side-by-side) or forward (pencil then Smurf) temporal arrangements or an unpaired (control) condition. After three exposures to the pairings, the children were asked questions about their affect toward the Smurf character, and then were allowed to choose either a yellow or an orange pencil (there was no significance of the pencil color chosen). Results of Macklin's study found no evidence of automatic behavioral responses in the children when a favorable character was paired with a product in either simultaneous- or forward-conditioning situations.

Mizerski (1995) tested three- to six-year-olds' ability to match trade characters and products, and tested the children's product affect by asking whether they liked or disliked the set of products (including cigarettes). He found a strong negative relation between recognizing Joe Camel and liking cigarettes. He concludes, "advertising trade characters do not appear to have a strong impact" (p. 69). In a similar study, the three- to eight-year-olds in Henke's (1995) research report not liking cigarettes (thus supporting Mizerski 1995), and

identify adults or “nobody” as the appropriate target market for cigarettes.

However, Bahn (1986) proposes that the results of his study of children’s brand/product preferences lend further support to the Piagetian notion that preoperational children’s (preschoolers) judgments are comprised of both simple cognitions and affect, and that affect often exhibits the greatest influence on these judgments.

Preference

While research findings show that young children can exhibit high levels of character/product recognition, association, and affect, the challenge arises when we assume that these early responses lead to product preference, intention, and choice. Recognition, association, and affect are manifestations of simpler cognitive processing abilities than preference, intention, and choice, and research supports the notion that these simple abilities would be present in children as young as two or three years old. More advanced cognitive abilities are required for the later behavioral stages of preference, intention, and choice because these responses require a child to position one item (e.g., brand/product) relative to others, something that a child may not be able to do until four or five years old, at the earliest. Therefore, we should expect to see inconsistency between attitude and preference in very young children.

According to Piaget, preoperational children (ages two to seven) cannot think or process logically or abstractly. They tend to rely on processing strategies such as transductive reasoning, which is characterized by a lack of logical connections between thoughts and juxtaposition reasoning, where the child does not relate parts to a whole or to an underlying quality (Singer and Revenson 1996). They may possess simplistic understanding of expressions of higher levels (i.e., longer, shorter, taller, etc.), but have difficulty using these expressions in everyday speech or demonstrating a series (Meadows 1993; Piaget and Inhelder 1969; Singer and Revenson 1996).

These processing deficits are posited by consumer behavior researchers as well. John (1999a) suggests that young children show significant deficits in the ability to compare, or form comparisons between persons or objects. Children under the age of six are unable to form social comparisons between other children; instead, they rely on concrete descriptors of single individuals (Barenboim 1981). According to Stutts and Hunnicutt (1987), at approximately age four, children enter the intuitive thought phase (a subclassification of the preoperational stage) and gain the ability to classify, categorize, and perceive similarities in objects. The kindergartners in this study were able to use a few visually perceptible attributes to compare brands. However, John and Sujana (1990) warned that because young children (four- and five-year-olds

in their study) focus on the perceptual attributes of the product, they often do not extend correspondence between the perceptual features and the underlying product value.

Intention and Choice

While several studies have examined the effects of animated spokes-characters on children’s product knowledge and attitudes, few of these studies have examined behavioral product choice. Henke (1995) and Mizerski (1995) both examined recognition, association, and liking, but did not examine product selection (note: Henke did measure children’s perceptions of the appropriate target market for the products) because of the nature of the product they were testing (cigarettes). Macklin’s (1986) study found no influencing effect of a favorable character on the selection of a particular object. One reason studying the motivations behind young children’s product choices may be difficult is the inconsistency of preference and intention that may be related to children’s inability to utilize product information.

Product familiarity is often proposed and studied as an important element in children’s product and brand preferences and choice. Shamir (1979) found that kindergartners, who tend to focus on few product attributes, exhibit preference for familiar products. Swanson (1987) also found a strong relation between kindergartners’ familiarity with products and their preference for, and choice of, those products. She suggests that perhaps these children’s inability to process multiple product attributes or dimensions results in product familiarity becoming the most salient attribute, the attribute for which children express the greatest preference and choice.

METHOD

Since the method for both studies was the same, the design is discussed first, followed by the details of each study. The studies utilized a modified hierarchy of effects model (Lavidge and Steiner 1961). While the Hierarchy of Effects model has been widely criticized (most recently in Weilbacher 2001) for being inaccurate, nonvalidated, and for assuming a direct relation from one stage to the next, viable alternative models do not exist, particularly in the study of advertising stimuli targeted at children. In fact, to date, no models of persuasion effects on children have been widely proposed or used by researchers. Children are simplistic processors, and the hierarchy of effects model, while flawed, demonstrates in a simple logical structure how advertising contributes to attitude formation and behavior (Barry 2002).

The hierarchy of effects model is often criticized as assuming that all advertisements have the same effect on all consumers (Barry 2002). The present study, particularly in its

focus on young children, who are notoriously inconsistent, never assumes that all consumers will respond to an advertisement, or respond in the same way. It is still beneficial, however, to understand how those consumer responses differ at the various stages of the model. Consumer researchers recognize that there may not be a direct relation between one stage of the model and the next, and that consumer responses will diminish; however, that diminution should not be at a rate less than chance, unless there are additional factors contributing to those changes.

While the overall model is subject to much scrutiny, elements of the model (recognition and attitude) have been used in similar, previous studies of spokes-character influence on children (Henke 1995; Mizerski 1995), but have not been tested through all stages. Furthermore, no previous studies have considered the hierarchy of effects in total with very young children, or in an audiovisual format.

Sample

Children attending licensed preschools in two university communities participated in the studies (a total of 12 preschools). There were no indications of differences between children from the two cities, and children from each city were used in all conditions to maximize sample consistency. Four of the preschools were university-sponsored programs that serve primarily children of faculty, staff, and students; four preschools were private programs located in neighborhoods nearby the universities and serve middle-class children, including some children of university faculty and staff. The private schools offered financial assistance and tuition subsidies for working or student parents. Located in the downtown area of one of the cities, two of the preschools were operated by the YMCA and serve primarily working- and middle-class families. Two of the preschools were church-sponsored programs located in upper middle-class neighborhoods near the universities, and serve primarily middle- and upper-class children whose parents were members of the church. All participants were two to five years old (Study 1 mean age = 46 months; Study 2 mean age = 43 months). (See Table 1 for detailed sample descriptions.)

A "Child Background Information" survey was completed by parents and returned along with consent forms, prior to testing. The survey asked about the child's age, gender, number of siblings, parent occupation, television and video viewing, and experience with the foods used in the testing (i.e., cheese crackers, fruit snacks, potato chips, and peanut butter cookies). Experience was measured using the question "How often does your child eat the following foods?" employing a five-point scale (1 = very often; 5 = never). Parents were given the option to indicate "My child is not allowed to eat this," and those children's responses were not included in the analysis.

Research Design and Procedure

Both studies employed posttest only, between-subjects factorial designs. Original, 22-second, two-dimensional animated mock commercials illustrating a character paired with a product were created for each condition in the studies to maximize control over children's preestablished attitudes and preferences for characters and products. While familiar products (Study 1—cheese crackers; Study 2—fruit snacks) were used, the name of the product was changed to reduce predetermined brand attitudes. The characters employed were newly generated and unfamiliar to the children (see Appendix B for illustrations). In addition, to prevent confounding, the amount, speed, and pace of the character's action were held constant during the animation design.

The test commercial was inserted into a programming sequence of a television show and accompanying commercials normally targeted at preschoolers on a children's television network. Commercial pods were placed at three points: (1) shortly after the beginning of the program, (2) approximately halfway through the program, and (3) right before the final program credits. Each pod contained three commercials of approximately the same length, of which the test commercial was the middle position in each pod (relieving primacy or recency effects). Filler commercials included three actual ads currently running on children's television (one for Cheerios, one for Cap'n Crunch, and one for a toy tea set), one current Sesame Street seat belt public service announcement, and one seven-year-old Oscar Mayer hotdogs ad that was unfamiliar to the children (to reduce novelty effects of the test commercial). One of the filler commercials (the one for Cheerios) was repeated twice to reduce the potential for presentation bias (first position/first pod; third position/third pod).

Each child received the three treatment exposures to allow enough repetition to begin forming a character-product association. Rust and Hyatt state: "children's reactions to a commercial often shift on the second exposure" (1991, p. 21). The entire programming/commercial presentation was edited to a total length of approximately 15 minutes, to reduce the children's fatigue and inattention.

Data were collected over the course of a three-month period by a team of trained undergraduate and graduate student interviewers, supervised by the primary researcher/lead author. The student interviewers were trained in research techniques and ethics in studying children, but were blind to the research propositions. Children were selected in groups of two to four by the teacher and/or interviewer and were led into a viewing room. Each group of children was randomly assigned to either the experimental or the control group. Care was taken to ensure as realistic a viewing situation as possible, given the constraints of each testing location (Anderson and Levin 1976).

TABLE I
Description of Study Participants

| | Study 1 | Study 2 |
|--|--|---|
| Age | | |
| 2 | 12 (17.9%); M = 29 months | 8 (21.6%); M = 32 months |
| 3 | 22 (32.8%); M = 40 months | 16 (43.2%); M = 41 months |
| 4 | 25 (37.3%); M = 53 months | 12 (32.4%); M = 53 months |
| 5 | 8 (11.9%); M = 64 months | 1 (2.7%); M = 60 months |
| Gender | | |
| Female | 33 (50%) | 19 (51.4%) |
| Male | 33 (50%) | 18 (48.6%) |
| Ethnicity | | |
| Caucasian | 56 (84.8%) | 31 (88.6%) |
| African American | 1 (1.5%) | 1 (2.9%) |
| Asian | 3 (4.5%) | 2 (5.7%) |
| Hispanic | 4 (6.1%) | 0 |
| Mixed race | 1 (1.5%) | 1 (2.7%) |
| Other | 1 (1.5%) | 0 |
| Average TV hours per week | Mean = 6.46 Median = 5.00 Mode = 3 | Mean = 7.64 Median = 6.5 Modes = 1, 7 |
| Average video hours viewed per week | Mean = 5.74 Median = 5.00 Mode = 3 | Mean = 6.36 Median = 5 Mode = 5 |
| Experience with test food (Study 1—cheese crackers; Study 2—fruit snacks) | Very often—12.3% 2—9.2% 3—36.9% 4—32.3% Never—9.2% | Very often—8.6% 2—11.4% 3—22.9% 4—45.7% Never—11.4% |

During viewing of the test video, each student interviewer watched one child and wrote open-ended comments regarding the child's body position relative to the television, the child's actions during the video, the child's verbal or physical responses to what he or she was viewing, and the child's interaction with other persons or objects in the room. The student interviewers' notes were examined and later coded into a three-point scale of perceived attention by the primary researcher and one of the interviewers (a graduate student). Intercoder reliability was determined using the Holsti formula (Holsti 1968), and resulted in 90% agreement for study participants.

1. Reliability = $2M/N1 + N2$
2. M = total number of coding decisions on which both coders agree
3. N = number of coding decisions

Discrepancies in category assignment were resolved through discussion. If it wasn't possible to credibly determine a child's level of attention, that child was eliminated from analysis. The determinants for category assignment were as follows:

- *Very attentive*: Eyes facing television screen throughout entire program; child appeared interested in program

or commercials; child not affected by distractions; child made comments about the program or commercials.

- *Moderate attention*: Child periodically faced television screen but looked away frequently; child watched portions of program or commercials but was engaged in other activities; child was easily distracted.
- *Minimal attention*: Child did not face television screen; child moved around the room; child talked significantly during viewing, but not about program or commercials; child highly distracted.
- *Unable to determine*: Child exhibited no emotional, verbal, or physical reaction to program or commercials. Responses were removed from the analysis.

Immediately following the viewing, each child was led to a separate area by an interviewer and questioned individually. The number of children selected for each exposure/measurement session corresponded to the number of interviewers, so there was no lag time between exposure and measurement. The interviewer briefly talked to the child to establish rapport before beginning the test questions (see questionnaire in Appendix A).

Three sets of pictorial flashcards (four cards per set) were used in the questioning (reflecting recognition and attitude measures) and the child was instructed to point to the correct animal (mouse, bear, dog, and squirrel—one animal per card), food (cheese crackers, fruit snacks, potato chips, and peanut butter cookies—one food item per card), or attitude face (four-point smile/frown face scale—one expression per card). While the child saw only one target character (mouse) in Study 1 and two target characters (dog and bear) in Study 2, as well as only one target product for each study (cheese crackers and fruit snacks), multiple animals and food items were used during measurement to reduce demand artifacts. If the child pointed to the correct animal(s)/food item, it was scored as a one (1); selection of any of the remaining three animals or food items was scored as a zero (0). For Study 2, if the child pointed to either the dog or bear (or both), it was recorded as a correct response.

All the food products were chosen in consultation with parents of preschoolers to ensure the use of products that the children were experienced with and had possibly eaten in the home. Peanut butter cookies, as well as the fruit snacks, were both perceived by the parents and children to be a sweet treat that had some nutritional qualities. Children whose parents consented to participation, but reported a peanut allergy, were allowed to participate in the study so they would feel like "part of the group." Their responses were removed from analysis, however, due to the constraints on their choice.

STUDY 1

The first study examines the influence of animated spokes-character action on a preschool child's range of effects (attention, recognition, etc.). Each commercial illustrates a character (mouse) paired with a product (cheese crackers) as indicated in the following:

- *Condition:* Character and product are prominently displayed and the focus is on the character's action toward the product; the mouse walks into view, then eats the cheese crackers.
- *Control:* Product is prominently displayed. The character is shown adjacent to the product but does not move after it walks into view.

Research Propositions

Because these studies examine a process, overall research propositions are proposed rather than individual hypotheses of direction for each experimental condition.

As discussed previously, earlier studies of the role of stimulus complexity on preschoolers' attention to television suggest that the action inherent in audiovisual animation attracts

the attention of young children (Alvarez et al. 1988; Huston et al. 1981; Watt and Welch 1983; Welch and Watt 1982). Therefore, we expected high levels of attention to the test commercial in this study. In addition, preschool-aged children have consistently shown high levels of character and product recognition, association, and character/product liking (Henke 1995; Mizerski 1995). The lack of research on young children's preferences and choice behavior, coupled with evidence from child development and consumer behavior theories that assert that preschoolers are unable to relate parts to a whole (Singer and Revenson 1996), understand expressions of higher levels (Piaget and Inhelder 1969), or form comparisons (John 1999a), leads to the assumption that the preschoolers in this study will have more difficulty expressing preference, intention, and choice. Therefore, we expect:

RP1: Preschool-aged children will exhibit high levels of attention, character and product recognition, association, and character and product liking, but lower levels of product preference, intention, and choice.

Communications researchers suggest that the attention-attracting and cueing ability of audiovisual information relates to the complexity of the message stimulus. Dynamic visual complexity (movement of objects in the visual field) tended to increase attention in four- to six-year-olds, which was related to higher levels of recognition and learning of the information (Welch and Watt 1982). Therefore, we expect:

RP2: The advertisement with the animated spokes-character acting on the product will promote higher levels on all dependent variables than the advertisement with no spokes-character action.

Brucks, Goldberg, and Armstrong (1986) suggest that regardless of whether children develop in cognitive structural stages, children's abilities to process information increase with age. Character and product recognition rates also increased with age in Henke's (1995) and Mizerski's (1995) studies. Therefore, we expect:

RP3: The four- to five-year-old children in the study will exhibit higher levels on memory-related dependent variables than the two- to three-year-old children in the study.

Also, testing Swanson's (1987) and Shamir's (1979) suggestion that young children's preferences and choice may be solely based on experience, the relation between experience and each dependent variable was examined.

RP4: Children who are more experienced with the test product will exhibit higher levels on all the dependent variables than those children who are less experienced with the product.

TABLE 2
Positive Response Levels on Dependent Variables for Study 1 (%)

| Dependent variables | Overall | Related action | No action |
|------------------------------------|---------|----------------|-----------|
| Very or moderately attentive | 89.4 | 93.8 | 85.2 |
| Character recognition | 77.9 | 87.5 | 69.4 |
| Product recognition | 51.5 | 59.4 | 44.4 |
| Character-product association | 70.6 | 68.8 | 72.2 |
| Character liking | 87.9 | 84.4 | 91.2 |
| Product liking | 86.4 | 96.8 | 76.5* |
| Product preference—cheese crackers | 14.9 | 18.8 | 12.1 |
| Preference—fruit snacks | 28.4 | 34.4 | 21.2 |
| Preference—potato chips | 28.4 | 21.9 | 36.4 |
| Preference—peanut butter cookies | 28.4 | 25.0 | 30.3 |
| Product intention—cheese crackers | 16.2 | 18.8 | 14.7 |
| Intention—fruit snacks | 29.4 | 34.4 | 23.5 |
| Intention—potato chips | 19.1 | 9.4 | 29.4 |
| Intention—peanut butter cookies | 35.3 | 37.5 | 32.4 |
| Product choice—cheese crackers | 18.5 | 15.6 | 22.6 |
| Choice—fruit snacks | 38.5 | 34.4 | 38.7 |
| Choice—potato chips | 20.0 | 15.6 | 25.8 |
| Choice—peanut butter cookies | 23.1 | 34.4 | 12.9 |

* Significant at $\alpha = .05$ (two-tailed test, RP2: related action versus no action).

Results

The sample size for Study 1 consisted of 68 children. Data were analyzed using SPSS and MiniTab to examine relations between the variables and also to plot the process across all nine dependent variables. Nominal-level measurement required the data to be examined using χ^2 /Fisher's exact test, two-sample *z*-tests of proportions, and Kendall's τ -b correlation analyses. The ordinal-level attention measures were used as is, and the interval-level measures of character liking and product liking were collapsed into dichotomous variables (1 and 2 = liked/3 and 4 = disliked) in order to compare them to other nominal-level dependent variables.

RP1: Hierarchy of Effects

The first research proposition suggested that all the preschool-aged participants would exhibit high levels of attention, character and product recognition, association, and character and product liking, but lower levels of product preference, intention, and choice (see Appendix A for operationalization). Examination of the data confirmed this.

Generally, participants exhibited high levels of attention to the television during program and commercial viewing, with 89.4% of children classified as very attentive or moderately attentive, which is statistically significant in a null hypothesis test ($\chi^2 = 40.97$; $df = 1$; $p < .01$) (see Table 2). A significantly high number of the children (77.9%) recognized the spokes-character ($\chi^2 = 21.24$; $df = 1$; $p < .01$); however, the 51.5% who recognized the product was not significant. Character-product association ($\chi^2 = 11.53$; $df = 1$; $p < .01$),

character liking ($\chi^2 = 37.88$; $df = 1$; $p < .01$), and product liking ($\chi^2 = 34.91$; $df = 1$; $p < .01$) exhibited levels above 70% as well. As expected, the children's product preference (14.9%), intention (16.2%), and choice (18.5%) dropped; however, only product intention was significantly lower than expected in a null hypothesis test ($\chi^2 = 31.118$; $df = 1$; $p < .01$) (see also Figure 1). Chi-square analysis indicated no gender differences for product selection in the preference, intention, or choice measures.

RP2: Spokes-Character Action

The second research proposition examined differences between the character action conditions and suggested that the advertisement with the spokes-character acting on the product will promote higher levels on all dependent variables than the advertisement with no spokes-character action. As seen in Table 2, the character action commercial prompted higher levels for all dependent variables, except character-product association, character liking, and product choice. However, the only significant differences ($\alpha = .05$) were for product liking ($\chi^2 = 7.870$; $df = 3$; $p < .05$; $z = 2.58$; $p < .05$). Correlation analysis suggested a positive relation between experimental condition and attention ($\tau = .279$; $p < .05$) and between experimental condition and product liking ($\tau = .303$; $p < .05$). Generally, it appears that spokes-character action related to the product did not create significant change among the dependent variables.

Graphic representation of the positive responses on the dependent variables also demonstrates the overall pattern of

high attention, recognition, association, and liking, but low preference, intention, and choice. In general, the related action condition generated higher levels across all dependent variables, except character–product association, character liking, and product choice (see Figure 1).

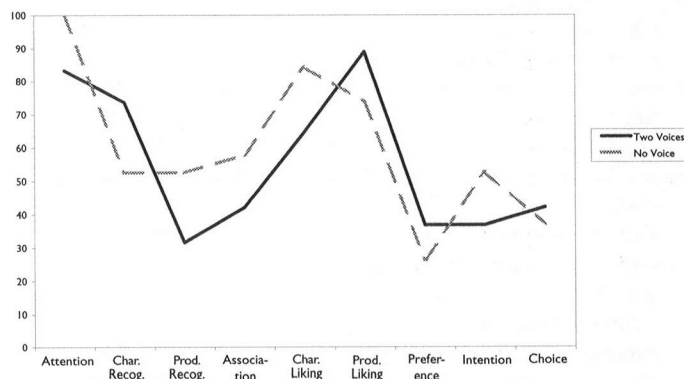
A series of McNemar tests were conducted to determine whether the change in responses from one stage in the model to the next was statistically significant (e.g., attention to character recognition) (Agresti 1990). For the commercial with related character action, these tests indicated strong evidence of a negative change from character recognition (87.5%) to product recognition (59.4%) ($p < .05$) and from product liking (96.8%) to product preference (18.8%) ($p < .01$). In the no-action commercial, a significant negative reduction was found between the responses for character recognition (69.4%) and product recognition (44.4%) ($p < .05$), and a significant increase was found in responses between product recognition (44.4%) and character–product association (72.2%) ($p < .05$), and between product liking (76.5%) and product preference (11.4%) ($p < .01$). Therefore, the assumption that the children would exhibit a drop in response from attitude/liking to product preference is supported.

Correlation analysis indicates that the only statistically significant relations were among the following variables (see Table 3). As expected, higher attention is correlated with higher character recognition, and there are also significant correlations between character and product recognition and between character and product liking. Product recognition is positively related to character–product association, although it does not appear that character recognition is necessary. Product preference and intention are also related. It is interesting to note that there is a negative correlation between character recognition and product intention; the children who recognized the spokes-character did not show intention for the product, despite high character liking scores.

RP3: Child's Age

Child development theory would naturally propose that as a child ages, more developed cognitive abilities would manifest as higher levels across memory-related dependent variables—hence, RP3. Small sample sizes required the combining of age groups into two- to three-year-olds and four- to five-year-olds to allow for the testing of statistically significant differences. Correlation analysis finds only one moderately significant positive relation—that between age and character–product association ($\tau = .241$; $p < .10$). Additional analyses of age \times experimental condition were performed. The two- to three-year-olds show much lower levels of character recognition for the no-action commercial (55%), than for the action commercial (88.9%) ($\chi^2 = 5.290$; $df = 1$; $p < .05$). In addition, the two- to three-year-olds viewing the no-action

FIGURE 1
Relationship Between Spokes-Character
Action and Dependent Variables
(Study 1)



commercial exhibited much lower levels of character recognition (55%) than the four- to five-year-olds viewing the same commercial (93.3%) ($z = -2.98$; $p < .01$). The two- to three-year-olds viewing the character action commercial also showed significantly lower levels of character–product association (55.5%) than the four- to five-year-olds viewing the action commercial (85.7%) ($z = -2.01$; $p < .05$). Generally, positive responses increased with age for the memory-related dependent variables (recognition and association), were similar on the affect measures (character and product liking), and decreased with age on the behavioral measures (intention and choice).

RP4: Product Experience

The fourth research proposition stated that children who are more experienced with the test product would exhibit higher levels on all dependent variables than those children less experienced with the product. Correlation analyses indicated the only moderately significant relation was between experience and attention. Children more experienced with the product had higher levels of attention to the television ($\tau = .295$; $p < .06$). Product experience was not found to be associated with the other memory-related effects.

Discussion

Study results support the first research proposition that young children would exhibit high levels of attention, character and product recognition, association, and character and product liking, but lower levels of product preference, intention, and choice, as suggested by previous research. With one exception, only directional support was found for the additional research propositions, however. Although the commercial with spokes-character action generally promoted higher levels of

TABLE 3
Correlation Matrix for Study 1

| Variable | Attention | Character recognition | Product recognition | Association | Character, like | Product, like | Preferred | Intention | Choice |
|-------------|-----------|-----------------------|---------------------|-------------|-----------------|---------------|-----------|-----------|--------|
| Attention | 1.000 | | | | | | | | |
| Char. rec. | .248* | 1.000 | | | | | | | |
| Prod. rec. | -.049 | .264* | 1.000 | | | | | | |
| Assoc. | .015 | .046 | .406** | 1.000 | | | | | |
| Char., like | -.005 | -.186 | .153 | -.025 | 1.000 | | | | |
| Prod., like | .110 | .066 | .092 | .149 | .264* | 1.000 | | | |
| Pref. | .074 | .024 | .161 | .090 | .061 | -.202 | 1.000 | | |
| Inten. | -.179 | -.248* | .187 | -.067 | .091 | -.156 | .267* | 1.000 | |
| Choice | .010 | -.233 | -.101 | -.217 | .140 | -.045 | .014 | .208 | 1.000 |

** Correlation is significant at .01 (two-tailed).

* Correlation is significant at .05 (two-tailed).

attention, recognition, product liking, preference, and intention than the nonaction commercial, these differences were only statistically significant for product liking. Tests of the effects of age revealed certain expected differences in memory-related variables. The moderating impact of experience on the dependent variables did not demonstrate overwhelming support. Thus, it appears that the increase in visual complexity manipulated in this study did not result in differences in the various stimulus measures.

STUDY 2

The second study examines the influence of auditory message complexity in young children's attention to, and retention of, information from an animated commercial. Auditory message complexity is manipulated as the number of voices in the ad. The following experimental conditions were used in this study; they reflect the use of two characters (bear and dog) in the ad, along with fruit snacks as the experimental product:

- *Condition:* Both characters are visually present and talk to each other about the product (the character mouths move) and two different voices are heard. This condition represents the highest level of auditory complexity as coded by a set of graduate students unrelated to this study.
- *Control:* Both characters are visually present, but neither character talks, nor do their mouths move. The script is read by a voice-over. This condition represents the lowest level of message complexity as coded by graduate students.

Research Propositions

As with the first study, overall research propositions are proposed that reflect the expected influence of auditory stimu-

lus complexity on the dependent variables. In addition, a similar overall trend of high attention, recognition, association, and liking, but low preference, intention, and choice is expected.

As mentioned earlier, auditory stimulus complexity is often conceptualized as the number of changes in the level of frequencies, as well as the number of different sounds heard on the aural channel (Thorson, Reeves, and Schleuder 1985; Watt and Welch 1983). Complex stimuli are more perceptually salient, so they break through a young child's tendency toward attention inertia and increase both attention to, and retention of, information. Therefore, we expect:

RP5: The advertisement with two character voices will promote higher levels on all dependent variables than the advertisement with no character voices.

As with Study 1, age is examined as an influential factor in a child's memory as well. As discussed, previous studies (Henke 1995; John and Sujana 1990; Mizerski 1995) suggest that increases in cognitive abilities as a child ages manifest as better memory storage strategies. Due to small sample sizes, correlation analysis only was used to examine this relation. We expect:

RP6: There will be a statistically significant positive correlation between age and the memory-related dependent variables.

In addition, experience is posited to influence children's memory for the product, as suggested by Shamir (1979) and Swanson (1987). As with age, small sample sizes limit analysis to an examination of correlation. Therefore, we expect:

RP7: There will be a statistically significant positive correlation between experience with the test product and the dependent variables.

TABLE 4
Positive Response Levels on Dependent Variables for Study 2 (%)

| Dependent variable | Overall | Two voices | No voice |
|--|---------|------------|----------|
| <i>Very or moderately attentive</i> | 91.7 | 83.3 | 100 |
| Character recognition | 63.2 | 73.7 | 52.6 |
| Product recognition | 42.1 | 31.6 | 52.6 |
| <i>Character-product association</i> | 50.0 | 42.1 | 57.9 |
| Character liking | 75.0 | 64.7 | 84.2 |
| Product liking | 81.1 | 88.9 | 73.7 |
| <i>Product preference—fruit snacks</i> | 29.7 | 33.3 | 27.8 |
| Preference—cheese crackers | 16.2 | 22.2 | 5.6 |
| Preference—potato chips | 18.9 | 11.1 | 27.8 |
| Preference—peanut butter cookies | 35.1 | 33.3 | 38.9 |
| <i>Product intention—fruit snacks</i> | 45.9 | 38.9 | 55.6 |
| Intention—cheese crackers | 16.2 | 16.7 | 11.1 |
| Intention—potato chips | 18.9 | 16.7 | 22.2 |
| Intention—peanut butter cookies | 18.9 | 27.8 | 11.1 |
| <i>Product choice—fruit snacks</i> | 41.7 | 44.4 | 35.3 |
| Choice—cheese crackers | 19.4 | 33.3 | 5.9 |
| Choice—potato chips | 13.9 | 5.6 | 23.5 |
| Choice—peanut butter cookies | 25.0 | 16.7 | 35.3 |

Results

The sample size for Study 2 consisted of 38 children. Similar to results from Study 1, attention to the animated advertisement, character recognition, and character and product liking were high, whereas product preference, intention, and choice were lower (see Table 4 and Figure 2).

In a null hypothesis test, attention (91.7%) was significantly higher than expected ($\chi^2 = 25.00$; $df = 1$; $p < .01$), but character recognition, product recognition, and character-product association did not vary significantly from expected values. Significantly higher levels of character liking (75.0%) ($\chi^2 = 4.172$; $df = 1$; $p < .05$) and product liking (81.1%) ($\chi^2 = 14.297$; $df = 1$; $p < .01$) were found. In the behavioral measures, only product intention (45.9%) was higher than expected ($\chi^2 = 8.11$; $df = 3$; $p < .05$).

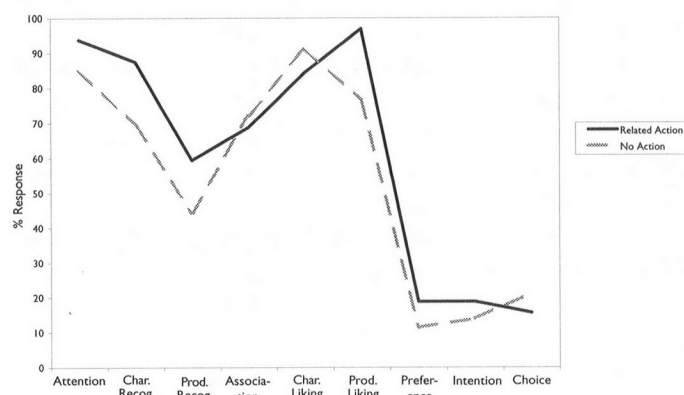
Small sample sizes prevented accurate χ^2 tests of gender differences in product selection for the preference, intention, and choice measures

RP5: Spokes-Character Voice

Research Proposition 5 reflected expected differences between the character voice conditions and suggested that the advertisement with the two spokes-character voices would promote higher levels on all dependent variables than the advertisement with no spokes-character voices (see Figure 2). This proposition is not supported.

A series of McNemar tests were conducted to determine whether the change in responses from one stage in the model to the next (see Figure 2) was statistically significant (Agresti

FIGURE 2
Relationship Between Number of Spokes-Character Voices and Dependent Variables (Study 2)



1990). For the commercial with two character voices, the decrease in recognition from character (73.7%) to product (31.6%) was significant ($p < .01$). In addition, there is strong evidence of a decrease in response from product liking (88.9%) to product preference (33.3%) ($p = .01$). For the commercial with no character voices, there is a significant decrease from attention (100%) to character recognition (52.6%) ($p < .01$), and from product liking (73.7%) to preference (27.8%) ($p = .01$).

Overall, Kendall's τ -b correlation analysis of the variables indicates significant relations between character recognition and character-product association ($\tau = .327$; $p < .02$), and product recognition and character-product association ($\tau = .426$; $p < .01$) (see Table 5). It is interesting to note that

TABLE 5
Correlation Matrix for Study 2

| Variable | Attention | Character recognition | Product recognition | Association | Character, like | Product, like | Preferred | Intention | Choice |
|-------------|-----------|-----------------------|---------------------|-------------|-----------------|---------------|-----------|-----------|--------|
| Attention | 1.000 | | | | | | | | |
| Char. rec. | .204 | 1.000 | | | | | | | |
| Prod. rec. | -.125 | .320 | 1.000 | | | | | | |
| Assoc. | -.018 | .327* | .426** | 1.000 | | | | | |
| Char., like | .209 | -.300* | -.136 | -.002 | 1.000 | | | | |
| Prod., like | -.100 | -.110 | .196 | -.043 | .112 | 1.000 | | | |
| Pref. | 0 | .167 | -.121 | .000 | .153 | -.203 | 1.000 | | |
| Inten. | -.027 | .029 | .090 | .053 | .152 | -.130 | .527** | 1.000 | |
| Choice | -.091 | .059 | -.143 | .269 | .223 | -.181 | .378* | .356* | 1.000 |

** Correlation is significant at .01 (two-tailed).

* Correlation is significant at .05 (two-tailed).

there is a significant but negative correlation between character recognition and character liking ($\tau = -.300$; $p < .05$); the children who recognized the character like it less than the children who did not recognize it. As expected, product preference, intention, and choice are correlated.

RP6: Child's Age

Small sample sizes required the combining of age groups into two- to three-year-olds and four- to five-year-olds to allow for the testing of statistically significant age differences. Generally, there were few age differences in positive responses for the memory-related dependent variables and affect measures, and positive responses increased with age on the behavioral measures (intention and choice). However, there were no statistically significant correlations between age and any of the dependent variables, as suggested by RP6.

RP7: Product Experience

Product experience did appear to be related to character-product association ($\tau = .371$; $p < .02$) and product preference ($\tau = .357$; $p < .03$), indicating that those children who ate fruit snacks more often at home were able to associate the character and product more and exhibited product preference more than those children who ate fruit snacks less often, as proposed by RP7.

Discussion

As expected, Study 2 showed the same general trend as Study 1: Animated advertisements promote high attention, recognition, association, and liking, but lower product preference, intention, and choice in preschool-aged children. However, the assumption that increased stimulus complexity, in the form of more character voices, would promote increased lev-

els across the dependent variables was not supported. Furthermore, age did not appear to have any relation to the child's responses on the dependent variables, and product experience was only influential for character-product association and product preference.

OVERALL DISCUSSION

The use of an animated spokes-character to promote products to children has been hotly debated for the past 30 years. Despite public opinion about the influence of spokes-characters on children's product desires, academic studies of the relation between spokes-characters' influencing abilities and children have been generally inconclusive. Children have been shown to have relatively high recognition of spokes-characters (Fischer et al. 1991; Henke 1995; Mizerski 1995), but the influencing power of spokes-characters has not yet been substantiated (Henke 1995; Macklin 1986; Mizerski 1995; Reeves and Greenberg 1977). The purpose of the present study was to (1) replicate the piecemeal hierarchy of effects findings from other studies, and (2) further contribute to the debate by examining the advertising stimuli of two characteristics of animated spokes-characters that communications research suggests contribute to higher attention and retention of information through stimulus complexity: character action and number of character voices.

As suggested by communications experts and as shown in previous consumer behavior research, advertisements containing an animated spokes-character generate high levels of attention, character recognition and liking, and product recognition and liking. In addition, the two- to five-year-olds in this study were able to match the spokes-character to the advertised product at relatively high rates. However, these high levels of recognition and liking did not necessarily transfer to high rates of product preference, intention, or choice.

The demonstration in the present study of the lack of connection between the stages in the hierarchy of effects model, and the suggestion that it may not be appropriate for children, also supplements past studies of preoperational children (ages two to seven) and their reliance on transductive reasoning, which does not provide logical connections between thoughts and wherein the child does not relate parts to a whole or to an underlying quality (Singer and Revenson 1996).

Complementing the work of John (1999b), preoperational children's "perceptual boundedness" and limited processing abilities are again demonstrated in the present research, as the participants were able to easily recognize the perceptual features of the advertisements (characters and products), and in fact, several children offered quite accurate perceptual descriptions of the characters, products, and advertisements (e.g., color of characters, actions, jingle, etc.). However, while perceptual recognition and affective response to the characters and products were quite high, as the measurement tasks changed to require a higher level of cognitive processing, the children's difficulty in storage and retrieval of this character information became quite evident. These information-processing deficiencies were particularly evident in the final product choice measure, despite the fact that the children were presented at product choice with a visual pairing of the character and product to cue information retrieval.

Researchers have found that one of the most challenging and frustrating aspects of studying and measuring young children's (typically preschoolers) product preference is the relative inconsistency with which children often hold preferences (Capon and Kuhn 1980). Children frequently change preferences of favorite toys or foods, and if asked to name their favorite, may simply respond with the last toy they played with or food they ate. These inconsistencies have led researchers and company managers to criticize research on young children's preferences on the grounds that these preferences are not good indicators of future behavior (Rust and Hyatt 1991). This study argues that even preferences are tenuous at best in young children, and are often not related to product recognition and affect because deliberate processing and communication of preference, intention, and choice requires cognitive abilities that may not be present in children until they are school-age. The lack of age differences between the two- to three-year-olds and the four- to five-year-olds supports the notion that these abilities probably do not develop until a later age.

Implications for Advertising Policies Related to Children

These studies contribute to the continuing discussion regarding the efficacy and ethics of advertising targeted at children. The research examined two key form variables in children's animation—action and voice—which are believed to contrib-

ute to higher attention and memory of information. However, the high attention, recognition, and liking of an animated spokes-character in the present study do not appear to be related to high levels of product preference, intention, and choice. Animated advertising characters are continually developed and used by marketers targeting children, so anecdotal evidence would support that spokes-characters probably have some type of influencing power that was not addressed in this study. Perhaps the power of a successful spokes-character lies in the amount of exposure the character receives, or some other character aspect that is yet unstudied.

The findings of the present study also provide additional understanding of the relationship between children and spokes-characters. While television advertising targeted at children has been modified and adapted to fit many of the self-regulation guidelines (such as nonmisleading product demonstrations) of agencies such as CARU, the growth of on-line advertising poses potential concerns. The present study demonstrated that audiovisual message presentations can be highly attention getting and recognition building for young children. On-line advertising provides an even more complex audiovisual environment than television, where distinguishing between a fantasy and a real environment (principle no. 2 of the CARU guidelines) may be even more difficult. In addition, CARU guidelines restricting host-selling by animated characters may need to be examined and modified for on-line environments where a product or spokes-character may become the central character in an adver-game (Neuborne 2001; Snider 2002).

Child advocates argue that the only way to control the effect of advertising on children is to regulate it, or even ban it. They argue that society cannot trust parents to just "turn off" the television if they do not want their child exposed, that parents have lost control over their children's viewing because of media proliferation. Banning advertising is problematic, however, since child-targeted programming often appeals to wide ages. How do we decide that advertising that is manipulative for a 10-year-old is appropriate for a 12-year-old? Furthermore, if child-targeted advertising is banned, television stations will lose revenues that support educational programming. Better regulatory processes could be implemented to address the concerns of manipulative or deceptive advertising, but a total control over advertising simply because it encourages a desire would restrict information flow to those very children who need to learn how to approach media persuasiveness.

Limitations and Recommendations for Future Research

The results of the present study warrant several caveats and serve as a catalyst for future research. First, the nature of this

study (i.e., spokes-character attributes) assumed that the presence of a spokes-character is beneficial to the development of product knowledge and preferences in children, but never tested that assumption through a character/no character examination. Employing such a control in future studies would obviously help resolve this question.

A second challenge to the present study was the small sample size, which limited the power of the statistical tests and prevented more detailed analysis of age differences. Parents were hesitant to allow their young children's participation in marketing-related research because of a negative opinion of advertising targeted at young children. In addition, young children's limited cognitive abilities required the use of mostly nominal-level measurement, again limiting data analysis. Given the processing limitations of this age group, and the natural protectiveness of parents, these limitations will be difficult to resolve. Additional studies with larger sample sizes would be beneficial, and observational studies could perhaps help shed some light as well.

Third, the children participating in the present study were found to be experienced and sophisticated consumers of television programs and commercials; many children verbally acknowledged the transition from program to commercial during the viewing. This sophistication, paired with the simplicity and artificiality of the test commercial may have biased some of the children's responses. Previous advertising research has employed contrived ads to test differences in stimulus attributes in print media; this study is the first to do so in an audiovisual format. Given the sophistication found among very young children, one might argue that better realism of commercial creativity needs to be addressed in future studies. This will likely lead to a significant increase in expenses related to the design of stimulus ads, but it is a cost that may be required for external validity purposes.

Finally, it is possible that a lack of significant findings could be associated with the use of an unknown spokes-character. An unknown character was needed to eliminate a spokes-character/experience confound, but the unknown quality of the character may have complicated the children's responses after only three exposures to the advertisement; the children may simply have not had enough time to develop product preference because of limited exposure. While Rust and Hyatt (1991) suggest that children's reactions to a commercial often change after the second exposure, it is possible that strong experience with a spokes-character, often derived from massive media exposure and popularity of the character, motivates the leap from liking to preference, intention, and choice. Further studies are needed that examine the differences between more "novel," newly popularized characters, and more long-standing, traditional characters, to see under what conditions the former would outperform the latter as influencing children's memories, attitudes, and subsequent behavior. Perhaps a relatively new char-

acter may be recognized and invoke liking, but mass exposure is needed to influence preference and/or choice.

While the present study provides more information about the influence (or lack thereof) that spokes-characters may have on children, more research is needed to better understand this phenomenon, particularly when parents and child advocates base their arguments on anecdotal evidence that is counter to these findings. Further research is needed that would compare a spokes-character versus a non-spokes-character advertisement to validate the assumption that the mere presence of a spokes-character is beneficial. Furthermore, the present study only tested two animation attributes: action and number of voices. These are only two of many characteristics that lend opportunity for study. The notion of audiovisual stimulus complexity and stimulus threshold is ripe for examination with children.

A strong contribution could be made by research examining the influence that parental information, discussion, and control have on a child's perceptions of advertising spokes-characters. Some parents encourage their children's relationships with characters by purchasing items with the character, or even by encouraging the child's attention to the character. Other parents strongly discourage their children's attention to characters and go to great lengths to shield their children from persuasive characters. Research is needed to understand how parents' behaviors interact with persuasiveness of characters.

Finally, a recent study by Mumme and Fernald (2003) suggests that children as young as 12 months may cue emotional responses from actors on television. This supports previous findings by Meltzoff (1988) that 14-month-olds can imitate the actions seen on television. These results beg the question that if a very young child can pick up emotional cues from human actors on television, and even imitate the actions seen on television, can these children also cue emotions and actions from nonhuman characters, especially with the advances in computer technology that create very realistic-looking animated characters? More research is needed to test this phenomenon with animated persuasive characters, such as those that might be used in children's advertising.

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APPENDIX A

Measurement Questionnaire

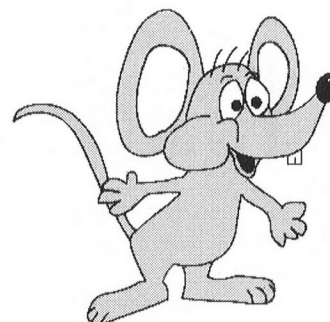
1. *Character Recognition*: "Please point to the animals you saw on the TV that we just watched."
 - A child pointing to the correct animal was recorded as "correct" or one (1); pointing to the other animals was recorded as "incorrect" or zero (0).
2. *Product Recognition*: "Please point to the food you saw on the TV that we just watched."
 - A child pointing to the correct food item was recorded as "correct" or one (1); pointing to the other food items was recorded as "incorrect" or zero (0).
3. *Character-Product Association*: "Can you show me which foods go with which animals?"
 - The child was asked to put the cards with the matching animal(s) and food together. If the match was correct (Study 1—mouse with cheese crackers; Study 2—bear and dog with fruit snacks), the response was recorded as "correct" or one (1); any other animal/food match was recorded as "incorrect" or zero (0).
4. *Character and Product Liking*: "How much do you like _____?"
 - Attitude face cards were spread on the floor in front of the child. As the interviewer held up a card with an animal or food item (all animals and food items tested), the child was asked to point to the face that showed how much he or she liked or didn't like the item on the card. To ensure the child understood the directions, before the testing of study animals and food items, practice rounds were held in which the interviewer asked the child how much he or she liked items such as broccoli, ice cream, playing with blocks, and so forth. The child was instructed that it was okay to "not like" something. The child's response to the face cards was recorded on a four-point scale (1 = strongly like, 4 = strongly dislike).
5. *Product Preference*: "Let's pretend that your mommy or daddy might have to go somewhere for a little while and you're going to have a babysitter. The babysitter wants to give you a snack, but doesn't know what kind of food you like. Can

you point to the picture of the food you would want to eat for your snack?" (Asked three times.)

APPENDIX B

Spokes-Characters Used in Testing

Study 1



- Child's response was coded as the food item to which he or she pointed. Preference was recoded into a dichotomous variable indicating selection (1) or nonselection (0) of test item.
 - The preference measure was asked three times at the recommendation of child development experts due to preschool-aged children's inconsistencies of preference. Trial 1 measure served as a proxy measure for the child's most salient preference, while a summary measure of preference was computed by adding the 1/0 scores of each trial. The summary measure was intended to measure preference consistency. Analysis of the preference summary measure indicated a lack of consistency in response, and correlation analysis suggested a stronger relation between first-choice preference and intention, so the first-choice measure is reported.
6. *Product Intention:* "Because you were so helpful when you talked to me today, we're going to come back in a few days after we've talked to all the kids in your class and bring you a snack for helping us. I need you to tell me which snack you want me to bring for you."

- Child's response was coded as the food item to which he or she pointed. Intention was recoded into a dichotomous variable indicating selection (1) or nonselection (0) of test item.
7. *Product Choice:* Each of the four snack products were placed in bags with the character cards displayed on the front of the bags. Each participating child was brought into the room individually and told that he or she could select one of the snacks to take home as a reward for helping the interviewers. Each child selected his or her snack product while another researcher recorded the selection. The product was then placed in a sealed paper sack with the child's name on it, and the snacks were then given to the teacher for the child to take home that afternoon.
- Child's response was coded as the food item to which he or she pointed. Intention was recoded into a dichotomous variable indicating selection (1) or nonselection (0) of test item.

Study 2

