New Media Interactive Advertising vs. Traditional Advertising

This research explores the effectiveness of interactive advertising on a new medium platform. Like the presence in industry and the media themselves, the academic research stream is fairly new. Our research seeks to isolate the key feature of interactivity from confounding factors and to begin to tease apart those situations for which interactivity might be highly desirable from those situations for which traditional advertising vehicles may be sufficient or superior.

We find that the traditional linear advertising format of conventional ads is actually better than interactive advertising for certain kinds of consumers and for certain kinds of ads. In particular, we find that a cognitive ''matching'' of the system properties (being predominately visual or verbal) and the consumer segment needs (preferring their information to be presented in a visual or verbal manner) appears to be critical.

More research should be conducted before substantial expenditures are devoted to advertising on these interactive media. These new means of communicating with customers are indeed exciting, but they must be demonstrated to be effective on consumer engagement and persuasion.

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INTERACTIVE MARKETING SYSTEMS are enjoying explosive growth, giving firms a plethora of ways of contacting consumers (e.g., kiosks, Web pages, home computers). In these interactive systems, a customer controls the content of the interaction, requesting or giving information, at the attribute-level (e.g., a PC's RAM and MHz) or in terms of benefits (e.g., a PC's capability and speed). A customer can control the presentation order of the information, and unwanted options may be deleted. The consumer may request that the information sought be presented in comparative table format, in video, audio, pictorial format, or in standard text. Increasingly, customers can also order products using the interactive system.

These new media are no fad, and while they are only in the infancy of their development, they are already changing the marketplace (cf. Hoffman and Novak, 1996). The hallmark of all of these new media is their *interactivity*—the consumer and the manufacturer enter into dialogue in a way not previously possible.

Interactive marketing, as defined in this paper, is: "the immediately iterative process by which customer needs and desires are uncovered, met, modified, and satisfied by the providing firm." Interactivity iterates between the firm and the customer, eliciting information from both parties, and attempting to align interests and possibilities. The iterations occur over some duration, allowing the firm to build databases that provide subsequent purchase opportunities tailored to the consumer (Blattberg and Deighton, 1991). The consumer's input allows subsequent information to be customized to pertinent interests and bars irrelevant communications, thereby enhancing both the consumer experience and the efficiency of the firm's advertising and marketing dollar.

As exciting as these new interactive media appear to be, little is actually known about their effect on consumers' consideration of the advertised products. As Berthon, Pitt, and Watson (1996) state, "advertising and marketing practitioners, and academics are by now aware that more systematic research is required to reveal the true nature of commerce on the Web" or for interactive systems more generally. Our research is intended to address this need, and more specifically to focus on the effects of interactivity. We investigate interactive marketing in terms of its performance in persuading consumers to buy the advertised products.

We wish to begin to understand whether interactive methods are truly superior to standard advertising formats as the excitement about the new media would suggest. Alternatively, perhaps there are some circumstances for which traditional advertising is more effective. Certainly it would not be desirable to channel the majority of one's advertising resources toward interactive media until they are demonstrated to be superior persuasion vehicles. To this end we present an experimental study comparing consumer reactions to products advertised through an interactive medium with re-

actions to products advertised in a more traditional, noninteractive format.

CLEAN COMPARISON OF INTERACTIVE TO TRADITIONAL ADS

Comparing interactive to traditional advertising poses the difficult problem of obtaining a valid, apples-to-apples comparison. If the advertising differs in incidental ways, it will be difficult to attribute differences to the media per se. The interactive presentation thus should be no more high-tech than the traditional. Nor should the traditional have superior production values. Most of all, the basic product information presented should be the same in both cases.

To obtain a valid comparison then, it is necessary to create interactive advertising that differs from traditional advertising on the core dimension of interactivity but is the same in other respects. We conceptualize this dimension of interactivity as follows. Interactivity is fundamentally the ability to control information. Whereas in traditional advertising, the presentation is linear and the consumer is passively exposed to product information, for *interactive* advertising, the consumer instead actively traverses the information. The pieces of information the consumer sees depends on where the consumer wants to go from one step to the next.

Depending on the design of the interactive system, many modes of traversal are possible. One major possibility is the hierarchical tree organization for traversing information through which decisions are made at branching points that determine subsequent pathways. Traversal here means making choices at every branch point, as with asking people if they wish to see books or music, then fiction or nonfiction, then mystery or romance, etc. A design based on hierarchical traversal is used in this study to implement interactivity.

Traditional advertising can be conceptualized in a parallel way in order to focus, for research purposes, on its lack of interactivity. With traditional advertising, the consumers have no control over the order in which they are exposed to information. The traversal mode is a simple, linearly ordered string. Ads for products are presented one after the other in a linear flow with consumers reading or viewing predetermined ordered sequences of information.

The linear flow of traditional advertising media such as TV and print stand in contrast to the design of any interactive system. We focus in this research on a hierarchical traversal system and contrast it with the linear. Other designs for interactive advertising (circular, networked, etc.) are of course possible and should be pursued in future research. All interactive designs, however, stand in the same contrast to the linear. Specifically, in any interactive format, the user has greater control over the traversal order and the resulting subset of information presented.

The excitement over new interactive media has implied that interactive systems should always be superior to traditional advertising. This expectation apparently translates into the hypothesis that hierarchical (or any other interactive) information traversal is inherently superior to the linear flow of product information. But when viewed at the level of information traversal it seems to us entirely reasonable to ask why this should necessarily be the case. Might the linear traversal of traditional advertising sometimes be better? And, if so, the best question would seem to be, in what cases does the added complexity of the interactive system interfere with comprehension and persuasion?

To explore the possibility whether interactive advertising is always superior to traditional advertising, or to begin identifying when traditional advertising might be superior, we consider two additional factors in this study. One is a psychographic personality characteristic of consumers. It relates to how the consumer mentally represents the world-whether the consumer thinks "in pictures" or "in words." A picture or visual orientation is thought to involve a relatively more complex comprehension process. Thus, we anticipate that interactive advertising might be more poorly suited to these "visual consumers" because it adds to the complexity of their comprehension task.

Another factor that should be important that we examine is the nature of the advertising message itself. Advertisements themselves can be more visual or more verbal. Reasoning along the same lines as above, it would seem that more visual advertisements may be more demanding and hence might actually yield better performance delivered via traditional advertising.

To summarize, in this study we will compare interactive advertising implemented in a hierarchical information traversal design to the linear flow of traditional advertising. We will equate all other aspects of the advertising beyond this conceptual difference in order to obtain a valid comparison. We further examine the visual-ness and verbal-ness of both consumers and the advertisements. Specifically, we will measure and classify our respondents as relatively more visual or more verbal using the Childers, Heckler, and Houston (1985) scale. And we will pre-test (and re-verify) our advertisements to be either highly visual or highly verbal. Results will be based on typical measures of recall and recognition and attitude and purchase intentions.

THE INTERACTIVE MEDIUM EMPLOYED

The hierarchical information traversal interactive advertising design used in this

study was implemented on an Apple personal computer. A program was written for the PC that simulates an interactive system. Consumers had control over their viewing experience. They clicked icon buttons and chose the products for which they wished to see advertisements.

The linear information traversal of traditional advertising also employed the PC for the sake of comparability. But the program simulated a viewing session more like television viewing or reading a magazine in which the selection of advertisements and their ordering was predetermined, i.e., linear. As a reviewer pointed out, the vividness of the PC screen makes it likely more engaging than a true print advertisement in a magazine; but we mean the comparability in the focus on the linearity of both systems-one advertisement follows another and the consumer has no input over the flow.

Thus both the interactive and the traditional advertising were conducted on the PC screen. The common format was used to facilitate comparison across the key conceptual dimension of interactivity (not confounded with other factors such as the novelty of the computer for advertising). Our concern was not so much to replicate exactly any one traditional advertising medium but to provide a setting in which we could compare interactive versus linear, with no other confounding difference such as medium. Our consumers experienced the traditional advertising much like low preproduction value TV advertising using slides. The important point for this study was that this noninteractive advertising experience was comparable to that for the interactive except for the crucial fact of interactivity. The key point is that the presentation of products and advertisements and their order was predetermined in a linear sequence for the noninteractive advertising, in contrast to the interactive advertising.

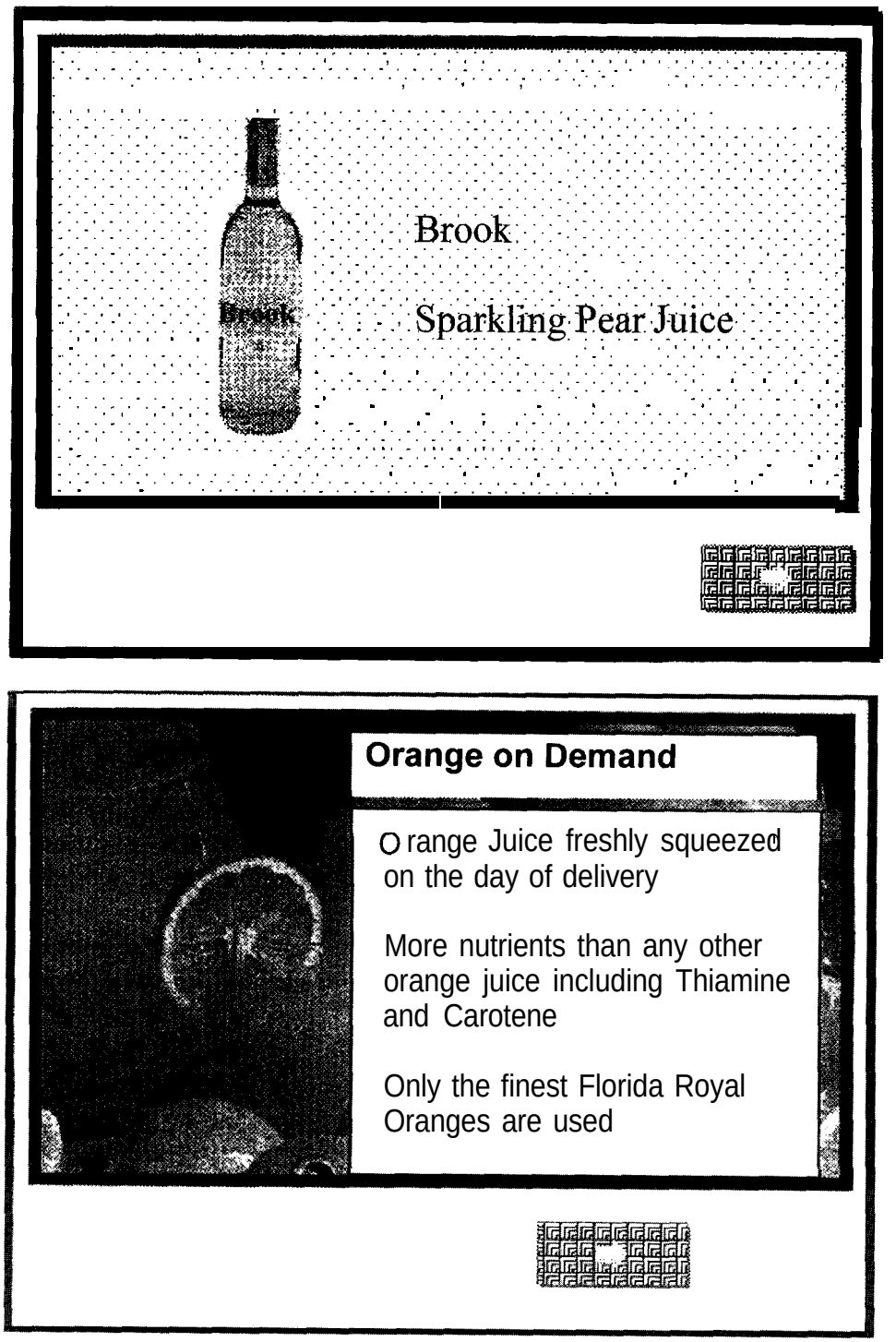

Figure 1 Screen Images of Advertisements for "Less Visual" Products A and B

HOW THE ADS WERE CONSTRUCTED AND SELECTED

A pretest of 31 stimulus advertisements constructed from art photographs of foods and drinks was administered to a small test sample of 17 consumers. The computer program permitted the respondents to view the advertisements for the prod-

ucts at their own pace. Each advertisement showed a picture and varying amounts of advertising copy text. Likert scales were used to measure the following stimulus properties: product appeal, appetite appeal, novelty, how visual the advertisement appeared, and how verbal the advertisement appeared.

On the basis of this pre-testing, products were selected to be approximately equally appealing in order to diminish any effect of initial preferences or affect. Products were also chosen that were moderately novel-not so new that respondents spent a great deal of time pondering the new offering and not so familiar that respondents made associations to familiar brands.

Based on the extent to which the stimulus advertisement was considered to be visual or verbal in conveying information, four target stimuli (products A, B, C, and D) were chosen. The advertisements for products C and D were perceived to be relatively more visual in nature than for products A and B; e.g., the product shots for C and D cover the entire screen and are richer in color and detail. Products A and B have less appetite appeal, as the product shots were smaller and featured products that appeared healthier than products C and D. Black and white images from the color system of products A and B are shown in Figure 1; images for visual products C and D appear in Figure 2.

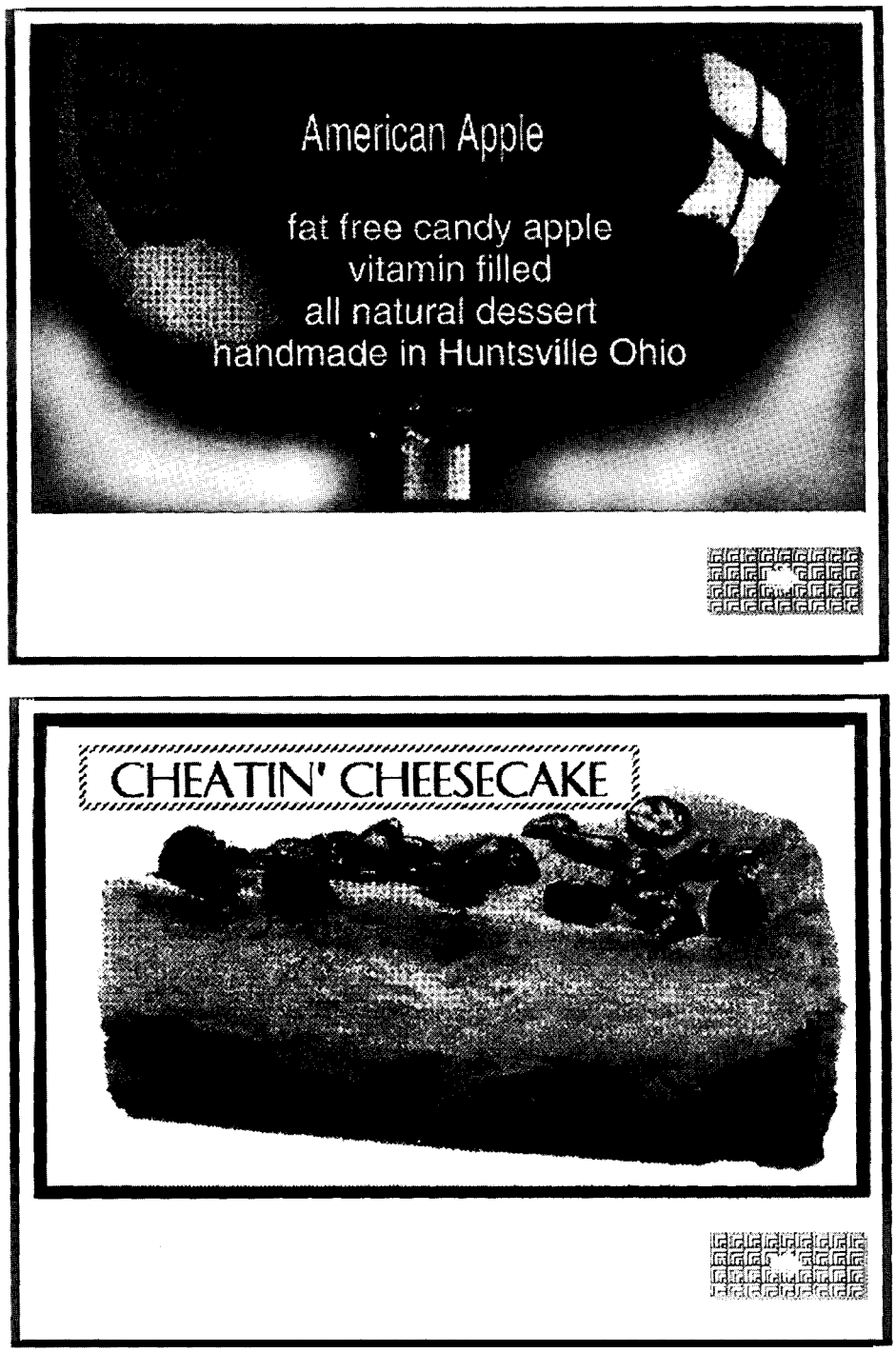

Figure 2 Screen Images of Advertisements for "Visual" Products C and D

THE EXPERIMENTAL INTERACTIVE ADVERTISING EXPOSURE EXPERIENCE

An interactive shopping program was constructed to advertise the products. There were two product categories, beverages and desserts, chosen for their familiarity and simplicity. These categories included our four focal products and four filler products.

The research participants consisted of 96 people from a cross section of ages who were contacted in a restaurant in the midwest. They were recruited with a cash lottery as an incentive.

Participants navigated the interactive system at their own pace, clicking icon buttons to proceed. Respondents in the interactive condition were given sequential choices about the products that they

would see. Respondents in the linear condition had no choices and hence the system was not interactive. Each advertisement for an item included a picture and detailed advertising copy. A single product image was projected per screen. The system recorded the system choices that they made, the time spent on each advertisement, and the time spent choosing the type of advertisement to peruse.

After looking at all the advertisements, participants were asked on-line to list the names of all the products that they had seen. Following this initial recall task, respondents' affect toward each brand and advertisement was measured using affective and cognitive semantic differential scales. The items measuring attitude toward the product are shown in Figure 3, and those that measure attitude toward the advertisement appear in Figure 4. Participants then rated their likelihood to purchase each of the items by distributing 100 points across the four products in a category.

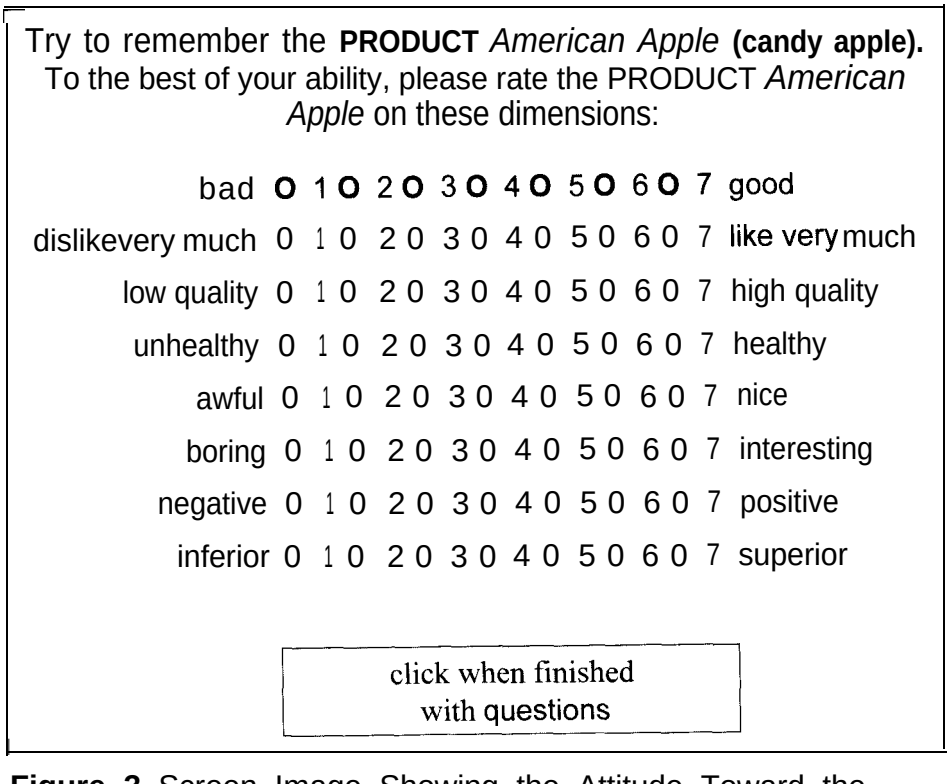

Figure 3 Screen Image Showing the Attitude Toward the Product Measures

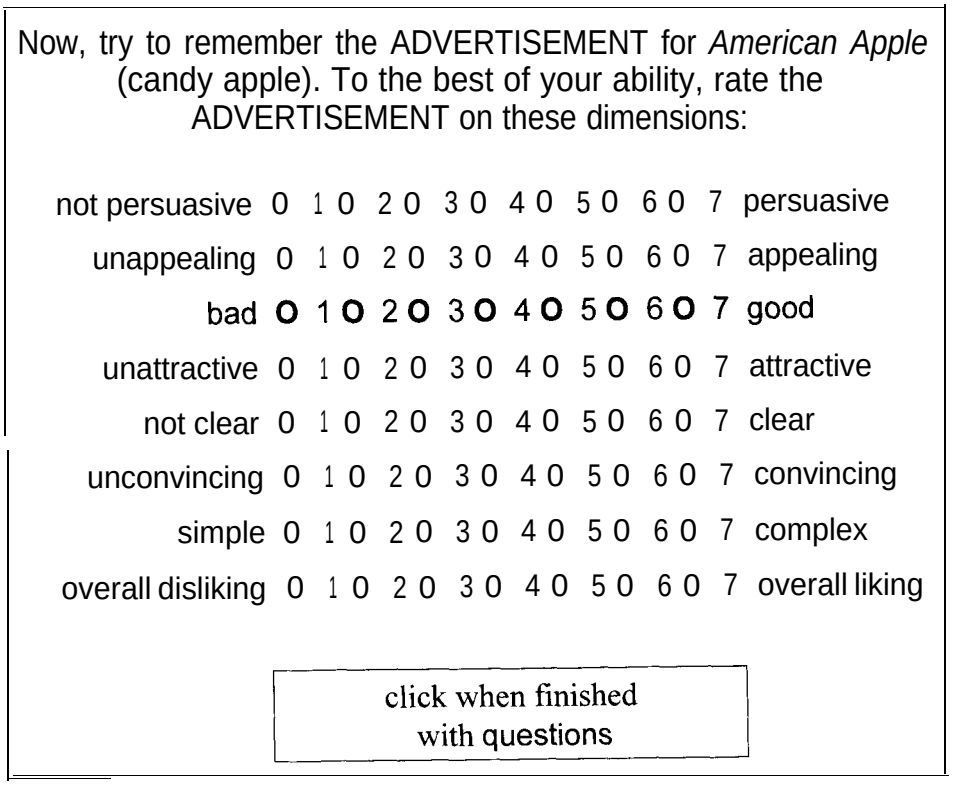

Figure 4 Screen Image Showing the Attitude Toward the Advertising Measures

Finally, we measured respondents on a variety of personality measures. Likert scales measured a consumer's predilection for understanding information in visual and verbal format based on Childers et al. (1985). Items used to discern respondents as relatively more visual or more verbal are presented in Table 1. Participants also responded to requests for demographic information (age and gender). We also asked them to rate their level of hunger. The entire experiment took about 30 to 50 minutes to complete.

Thus, in this study we investigated the role of interactivity versus linear presentation of advertisements, advertising copy characteristics (verbal or visual), and consumer psychographic orientations (verbal or visual) in the context of a shopping

task. In the interactive condition, consumers had more control over the presentation of information than in the traditional, linear condition. In the linear condition respondents clicked through the pre-set group of product advertisements in a preset order; they had no choice in the products that were shown to them or the order in which the products were shown. In the interactive condition, respondents controlled the products that were shown to them as well as the order that the product information was presented.

While the interactive condition allowed participants to experience and perceive control, in reality the interactive and linear conditions ran parallel advertisements in order to allow for comparability across conditions. (If the participants in the interactive condition had seen advertisements different from those presented to participants in the linear condition, we would not be able to attribute differences in recall or persuasion to the modality of presentation or the different advertisements.)

WHAT THE CONSUMERS DID

The dependent measures in Figures 3 and 4 supported two factors, "attitude toward the brand" and "attitude toward the ad" ($X' = 670.269$, df = 16, $p < .005$), yielding empirical results consistent with the existing theoretical literature and collective wisdom. The factor loadings are presented in Table 2.

Purchase intention

Using the respondents' scores on the Childers et al. (1985) scale, we classified each consumer as relatively more visual or more verbal and found that those persons scoring higher on visual-processing styles indeed tended to rate lower on verbal processing and vice versa ($X' = 5.778$, $p = .016$).

Figure 5 shows the results on purchase intentions for the more visual products (C and D). The findings can be interpreted either from the point of view of the respondent orientation, relatively verbal or visual, or from the point of view of the linear versus interactive contrast.

To take the former perspective, the respondent orientation varies on the horizontal axis-our participants were classified as either predominately verbal or visual in their orientation and preference for the presentation of information. Verbal participants (those at the left of the plot) who saw the advertisements presented in a linear controlled manner did not indicate (statistically) differently purchase intentions compared with those verbal consumers who saw the advertisements in an interactive manner. This finding is perhaps sensible, considering that a dominant feature of interactive systems is their pictorial nature. Verbal persons are not seeking photos, but rather information via text, and appear to simply be ignoring the graphics content.

In contrast, the visual consumers (those at the right side of the plot) were different. Persons preferring visual information who saw advertisements in the linear (traditional advertising) format stated more positive purchase intentions than the visual consumers who saw the advertisements via the interactive system ($F_{1,75} = 5.56$ $p = .0210$). This finding suggests that consumers seeking visual information find it more positively persuading using the traditional linear vehicle format.

Alternatively, Figure 5 can be examined by comparing the linear versus interactive profiles in the plot. Purchase intentions are enhanced in linear presentations for visual (versus verbal) consumers, and, in contrast, they are enhanced somewhat in interactive presentations for verbal (versus visual) consumers. Thus, these results indicate that interactive systems are not

TABLE 1
Psychographic Items Used to Discern Respondents with Visual or Verbal Orientations*

Visual Orientation
1. I like to daydream.
2. My thinking always consists of mental images or pictures.
3. When I'm learning something new I'd rather watch a demonstration than read how to do it.
4. I generally prefer to use a diagram than a written set of instructions.
Verbal Orientation
1. I prefer to read instructions about how to do something rather than have someone show me.
2. I can never seem to find the right word when I need it. (reverse scored)
3. I prefer activities that don't require a lot of reading. (reverse scored)
4. I enjoy doing work that requires the use of words.

*"These questions are derived from Childers, Heckler, and Houston (1985). This survey demonstrates a reliability coefficient $\alpha = 0.88$.

TABLE 2
Factor Analysis Results*

	Attitude toward the Brand	Attitude toward the Advertisement
bad-good product	0.893	
like-dislike-verymuch product	0.958	
low-quality-high-quality product	0.739	
awful-nice product	0.828	
boring-interesting product	0.505	
negative-positive product	0.846	
inferior-superior product	0.724	
not persuasive-persuasive advertisement		0.832
unappealing-appealing advertisement		0.703
bad-good advertisement		0.734
unattractive-attractive advertisement		0.658
not clear-clear advertisement		0.640
unconvincing-convincing advertisement		0.835
overall liking-disliking advertisement	0.336	0.631

"Only those loadings > 0.3 are noted

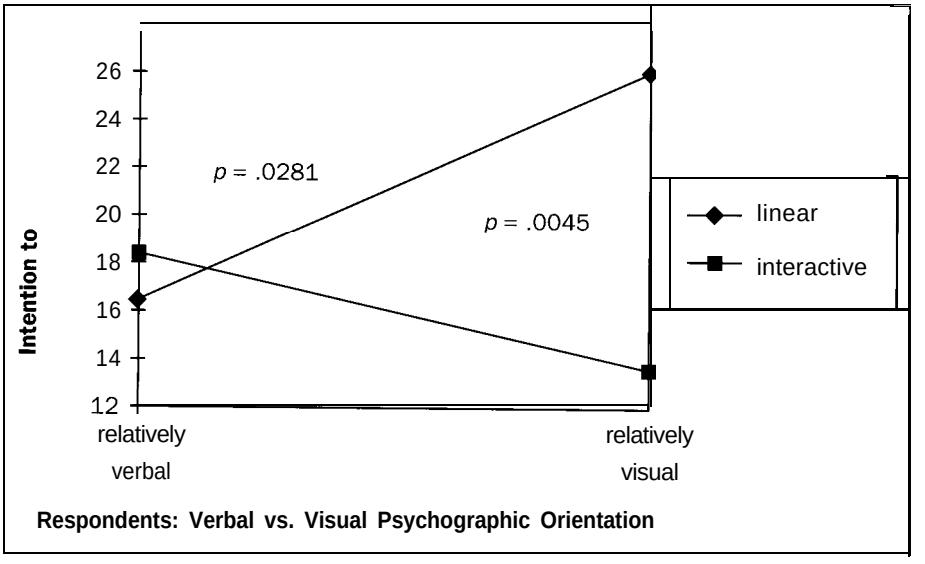

Figure 5 Interactive Effect of Interactivity and Visual Orientation of Respondent on Purchase Intention for Highly Visual Products (C and D)

uniformly superior. For visual persons, interactivity provides less effective persuasion than linear advertising presentations.

It is important to note that if interactive systems were always superior to traditional linear advertising formats, Figure 5 would have shown the interactive line above the linear line, for both sorts of persons. Instead, verbal persons appear to be unaffected by the system (linear or interactive), at least for these visual products. Furthermore, visual persons demonstrated more positive purchase intentions under the linear, noninteractive system.

Thus we might begin to conclude that indeed, sometimes interactive systems enhance preference and persuasion, and sometimes traditional linear formats do a superior job. In particular, certain system-user matches may be optimal; the result in Figure 5 reveals an interaction between visual skill and interactivity. For highly visual people, there was a significant increase in purchase intention for highly visual products when information was presented linearly. In contrast to the interactive condition, this increase did not occur for people with less visual orientations. It appears that the rather verbal task of making choices in the interactive conditions seems to have truncated visual processing. For low visual persons, limiting visual processing had no effect because they were not likely to draw from their visually oriented systems; instead, their purchase intentions were more influenced by the text.

Thus, there are at least some circumstances for which interactivity does not enhance advertising effectiveness. However, our explanation, regarding the visual person's processing being interrupted, could use more investigation. To this end, we examine the process measure of how much time each person spent examining each advertisement.

Time spent viewing advertisement

We found that for products with highly visual advertisements, participants spent more time looking at products presented in a linear format (M = 6.276 seconds) than when the same advertisements were presented in the interactive system (M = 5.256; $F_{1.75}$ = 4.70 p = .0333). Even with the novelty of interactivity, respondents did not spend more time with the advertising. Instead, they spent more time looking at advertisements that were presented in the traditional format. A reviewer made the observation that the PC interactive mode resembles the television medium, which, by association, might have prompted similarly passive ''vegging'' viewing. We wish to examine whether this amount of time spent on the advertisements also varied with participant type.

Figure 6 contains the interaction between the consumers' visual versus verbal orientation and the interactivity versus linear presentation factors on the dependent variable of "time spent" on the visual ads (C and D; F, $_{75}$ = 5.51 p = .0215). The pattern in Figure 6 is strikingly similar to that in Figure 5, which immediately suggests that persuasion to purchase intention is, perhaps not surprisingly, enhanced with time spent considering the advertisements.

For verbal people, the manner in which the advertisements were presented did not affect the time they spent on each advertisement. By comparison, for visual people, there was a significant decrease in time spent viewing these highly visual products when information was presented interactively in comparison to the linear condition.

An aspect of the interactivity, perhaps the task of making the verbal choices in the interactive condition, truncated highly visual processing. Perhaps the visual needs of the visual consumers are much more intense than the beauty shots in the product advertisements. This hypothesis challenges advertising development: the visual needs are ultra-demanding and must be particularly appealing in order to capture the attention of the visual-seeking consumer.

Overall, the results on the time dependent variable suggest that interactivity may interrupt the process of persuasion. Specifically, there is evidence that visual processing is inhibited by the use of an interactive system.

In the interactive system, users spent less time viewing the advertisements, and they were less likely to purchase target products.

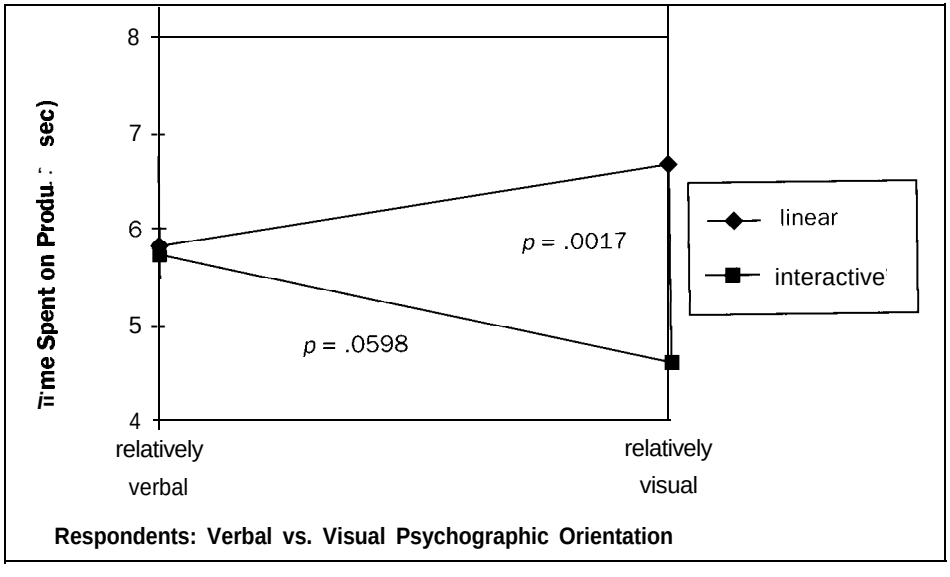

Figure 6 Interactive Effect of Interactivity and Visual Orientation of Respondent on Time Spent on Advertisements for Highly Visual Products (C and D)

DISCUSSION: INTERACTIVITY INHIBITS PROCESSING

These results suggest that something unexpected may happen to people when they are exposed to advertising on an interactive system. In the interactive system, users spent less time viewing the advertisements, and they were less likely to purchase target products.

Media developers talk about interactive vehicles as being inherently more interesting and motivating. However, our results indicate that the consumer can still simply buzz right through the interactive media, paying so little attention to the advertisements, that the message cannot function persuasively. Most software and Web pages certainly stand room for improvement for both ease of use and aesthetic quality; so perhaps as these are improved with more creative design, interactive formats will be better able to retain the attention of users traversing screens and mak-

ing millisecond decisions regarding interest level and relevance.

Our findings are intriguing because they would seem to contradict new media hype implying an entirely beneficial role for interactivity with respect to memory, attitude, and purchase intention. Interactivity indeed can be "fine," but consumers viewing advertisements via traditional linear formats performed at least as desirably (i.e., were more thoughtful in time spent and more persuaded in terms of likelihood to purchase) in some conditions and better in some conditions than those making active decisions to obtain information via the interactive system.

As a brief aside, consider that accompanying the decrease in purchase intention for some of the interactive conditions, there were, however, no effects of interactivity on attitude; thus a puzzling question: how could purchase intentions change without effecting attitude toward the product or ad? Persuasion is thought to be a process from presentation and attention, to comprehension, generation, and retrieval of related cognitions, to yielding and retention. Apparently when a customer uses an interactive system, the link between retrieval and yielding to the persuasion may be broken.

To further explain, consider evidence from our findings. The recall order of the products indicates the top-of-mind character of a product. The correlation between recall order and the log time spent viewing the product was significantly greater ($z = 2.193$, $p = 0.029$) for the linear ($r_{\text{linear}} = 0.558$) than interactive conditions ($r_{\text{interactive}} = 0.067$). In the linear condition, people had spent less time on the products that came to mind quickly. This result implies that users spent time considering the products that were presented to them. In the interactive condition, there is no relation between time and the top-of-mind nature of the product. From this result it appears that, with the interactive system, the latter stages of the persuasion process may have been inhibited.

The most important implication of this research is that sometimes interactive is not better! Under certain conditions, interactivity interrupts the process of persuasion.

SUMMARY AND FUTURE DIRECTIONS

The most important implication of this research is that sometimes interactive is not better! Under certain conditions, interactivity interrupts the process of persuasion. For the targeted products, purchase intention and the time spent viewing the advertisement declined when advertising was interactive. Moreover, there was further evidence that in particular visual processing was inhibited by interactivity: respondents with visual orientations appeared to be hampered by the interactive system as evidenced by decreases in purchase intention for the targeted products and less time spent on the advertisements. Respondents who were relatively more verbal were unaffected by the interactivity.

These results also raise the intriguing questions how and why the visual information display sped up the visual processors' time in the interactive condition. Perhaps the decreased time was a function of the very control afforded the users. When companies design Web pages, they are essentially relinquishing traversal control to the user. Enhancing the page's visual appeal may allow the (visual) users to capture the essence of the incoming information more quickly and perhaps in greater detail. However, we should also note that our results on the purchase intentions provide a cautionary conclusion with regard to the effectiveness of new media advertising.

Increasingly, Web pages and the like are offering viewers an option to obtain the information sought via "text only" options. This option would be an important one to study in subsequent research, because it would seem to align a format optimally with the verbal consumers' preference for information presented in a wholly verbal manner. The fact that our findings indicated that the interactive method was nearly irrelevant to the verbal consumers is quite sensible given that the overall impact of much interactivity is the rich visual quality. If the graphics were pared down so that the content of the verbal information were comparatively more salient, verbal consumers may have spent more time on the ads and hence have been more persuaded to purchase.

In terms of limitations, our sample size was somewhat small. We would like to see our findings confirmed on a larger scale before generalizing more broadly. In addition, in hindsight, we regret not measuring the respondents' level of experience with interactive media. Frequent users of such systems might indeed have different preferences and needs, so a scale tapping interactive experience would provide a potentially useful covariate for future research.

There may be implications regarding other demographic and psychographic variables as well. For example, gender has traditionally been linked to visual/verbal abilities and processing preferences, so we might expect the more typically verbal-prone users (e.g., women) to benefit more from, or at least not get distracted from, verbal interactivity than the more visual

users (e.g., men). It is also known that novices to a category spend more time in detailed comparison, whereas experts have already formed useful heuristics, and these differences should also have counterparts in time spent on interactive systems, as well as providing some resistance to truncated processing for the experts, for example.

While we focused our investigation on visual versus verbal-oriented people, there are many other relevant aspects of cognitive customization (e.g., expertise) to explore in future research. There are also presumably many attributes of the advertisements themselves that should be investigated further.

The research, like the industrial use and the media themselves, is fairly new. Many more paths of inquiry must be followed before we can state simply what consumers are doing when confronted with interactive formats. Until further investigation is conducted, it is wise to caution expenditures devoted solely to advertising on these interactive media until they are demonstrated to be superior persuasion vehicles, or at least not comparatively denigrative. However, we do know:

- Sometimes interactive media do not perform as well as traditional, linear ad presentations.
- Whether the interactive method is as "effective" depends on two things:
  1. whether the consumer prefers information presented in a visual or verbal manner, and
  2. whether the advertising content is inherently visual or verbal in impression.
- The "effectiveness" of the interactive media can be measured in two ways:
  1. its engagement, i.e., do consumers spend more (enough) time considering the advertisements, and
  2. its persuasiveness, i.e., do consumers report stronger positive affect, preferences, and purchase intentions.

Taken together, interactive media appear to be particularly constraining for verbal persons. A cognitive "matching" of the system properties (being predominately visual or verbal) and the consumer segment needs appears to be critical.

Investigating additional properties of the interactive system and consumer psychographic factors can only enhance the future effectiveness of interactive advertising. The new media are indeed exciting, and the potential is rich for shaping messages and formats for these vehicles of the future. JAR

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