An Experimental Investigation of Internet Advertising and the Elaboration Likelihood Model

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Given the similarities and potential differences between the Internet and other mass media, this research investigates the applicability of the Elaboration Likelihood Model (ELM) in this new domain. The moderating effect of involvement on both arguments and peripheral cues is tested, as is the influence of peripheral cues under higher involvement. Although the results of one experiment cannot be interpreted as conclusive, major tenets of the ELM were not supported. This study gives reason to believe that Internet advertising may be processed differently than "traditional" advertising. Specifically, involvement (both manipulated, and self-reported) has little moderating effect for arguments or peripheral cues on attitudes and intentions. Additionally, peripheral cues have little influence, regardless of involvement. On the basis of the results theoretical and practical implications are provided, as well as important directions for future research.

Without question the Internet or World Wide Web (WWW) has arrived. By the end of 2000 over 32% of U.S. households were expected to be "actively" online (eMarketer 1999), while Web advertising spending may hit $21 Billion by 2004 (eMarketer 2000a).

However, academic research into this emerging new communication tool lags significantly behind both its adoption by the public and technological advancements — although the recent launch of at least three new journals targeting electronic commerce should help address this situation. The development and/or refinement of current theory applied to the Internet is critical as "continuing developments in the area of new media technology represent *the* most important influence on the future of the advertising industry over the next 10 to 15 years" Ducoffe (1996, p. 21).

Among the challenges of conducting research on the Internet are its "newness" and the rapid rate of technological change and innovation in delivering Web-based communications. Already, an early favored Internet advertising form—the banner ad—has seen click-through rates drop below 0.1% (Khermouch and Lowry 2001). Since the introduction of the first graphical browser in 1994, the Web has seen rapid development of new methods for delivering digital content (e.g., JavaScript, xHTML, Shockwave, and others). On top of this, access speeds to the Web continue to increase, promising even more real-time, full video capabilities ("rich media").

Concurrently, serious questions have been raised about whether the current body of knowledge will prove useful in this new domain. Deighton (1997, p. 347) believes, "When a new method of marketing arrives as an exogenous shock and displaces other tools, the disciplinary knowledge accumulated to make sense of the displaced tools is of course itself displaced." The main question here then, whether one looks at Internet advertising as a new domain or simply a new communication tool, is whether or not Internet communications function in the same manner as communications in other media.

Certainly, Internet advertising is similar to advertising in other media in a number of ways–not the least being the objective of the sponsor serving the broad objective of applied communication or promotion. Other similarities include that the Internet is largely an advertising supported medium and audiences exhibit high levels of selective attention and perception (i.e., marketers still have to grab eyeballs, and hold them). Of greater interest, however, is what the key differences are between the Internet and other media (e.g., Sheth and Sisodia 1997; Testerman, Kuegler, and Dowling 1996).

Important differences between the Internet and other media include (but are not limited to) the following:

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(1) *Flexibility*. Internet advertising allows a wide variety of creative executions from text only to full-motion audio-video. Further, Internet ads can be repeatedly accessed at the consumer's convenience ("24 x 7"), unlike other electronic media.
(2) *Variability*. The Internet communication channel induces variation not found in other media. Consumers' Internet experiences are confounded not only by connection speed ("bandwidth"), and display (monitor size), but more complicated factors such as the use of not only different browsers (Netscape versus Internet Explorer), but different versions of these browsers and "plug ins" as well.
(3) *Accessibility*. While Internet access is unlikely to affect consumers' motivation to view ads, it may significantly impact their ability and opportunity to do so. In fact a disturbing "digital divide" between the technological "haves" and have-nots is already a major policy concern (Dunham 1999).
(4) *Salience*. As a medium, the Internet receives unequalled amounts of media attention. Hence, inherent interest in the medium, and messages on the medium, may be heightened. This effect is likely enhanced by the novelty of the medium as well.
(5) *Usage*. Given its interactivity and facilitation of one-to-one communication, unlike traditional broadcast media, the Internet has spawned a much broader range of uses than just communication. Examples include creation of on-line communities, traditional use as a media, and, for digital products, even functioning as a channel of distribution.
(6) *Interactivity*. Exposure to most Internet marketing activities is not passive–processing an Internet ad requires cognitive and behavioral effort on the part of the consumer. At the very least users must click through an ad to either gather more information or exit the screen.
(7) *Complexity*. Web pages themselves are likely more complex than either print of broadcast media advertisements (Bruner and Kumar 2000).
(8) *Stand Alone*. Finally, it needs to be acknowledged that there is a fundamental difference between Internet marketing and general advertising and traditional retail selling, in spite of its combing elements of both. Traditional retail consumers are exposed to a wide range of information sources and/or cues (e.g., point-of-purchase displays, in-store advertisements, store clerks' recommendations), and are allowed to conduct a physical inspection of the merchandise prior to purchase. This is not the case with many Internet offers as a company's Website is often the only information cue available. Hence, Internet advertising efforts must not only provide all needed product information, but must also facilitate and prompt consumer purchase as well. As a result, the role of Internet advertising, as well as the processing of Internet advertisements, might be significantly different as compared to traditional media.

Generally, then, these differences lead to an Internet experience that many consumers expect to offer: "greater shopping convenience, more current and complete product information, custom-tailored products and services, and potentially lower prices" (Burke 1997, p. 355). All told, given these factors, there are as many reasons to believe marketing on the Internet may be different from traditional marketing as there are to believe it is the same. This research begins to probe these similarities and differences.

Given the uncertainty over the effects, if any, of those differences just detailed on the processing of Internet communications, the study reported here tests the Elaboration Likelihood Model (ELM) of Petty and Cacioppo (1986). The ELM was chosen as it is, perhaps, the leading theory of how the key factor of involvement influences communication effects and has been well established in other media. The hypotheses drawn from the ELM and past studies of persuasive communications are tested in the context of Internet advertising–specifically company sponsored Internet sites. This type of Internet "advertising" was chosen as it is one form of Internet promotion that is likely to endure as firms continue building entire Websites to inform, persuade, and remind customers of their products.

To date, the ELM has been primarily tested with print media. While the expense and difficulty of creating and embedding realistic electronic stimuli is daunting, Internet advertisements present an almost unique opportunity to employ representative stimuli, settings, and contexts. While the latter two are challenging in any experimental setting, the stimuli used in this research mimic the use of experimental stimuli in the mass media where the ELM has been established, hence providing a robust test of the theory.

Past Literature

Elaboration Likelihood Model (ELM)

To date the ELM has been employed in explaining the effects of many distinct variables on persuasion.

Over a wide range of variables, under different experimental settings and operationalizations, the ELM has consistently added valuable insight into the process and outcome of persuasive communication.

The ELM extends persuasion research in two important ways. First, the ELM specifies *conditions* under which persuasion should be mediated by the amount of message relevant thought an individual undertakes. This is the elaboration component of the ELM, where elaboration is frequently operationalized as involvement.

The second key contribution of the ELM is the detailing of two possible *routes of persuasion*, or persuasion processes, that may occur. These two routes are the central route, occurring when involvement stimulates substantial amounts of message processing, and the peripheral route to persuasion that occurs when message-related thinking is limited. As message involvement increases, processing moves from peripheral to central resulting in the allocation of higher levels of processing effort, greater scrutiny of presented arguments, and numerous other effects. Conversely, as involvement falls off and less attention is paid to a message, peripheral processing becomes more dominant. Peripheral processing places a greater reliance on peripheral and/or affective cues in forming both message and brand attitudes. All these effects are moderated by involvement, with the peripheral cue's effects lessening as involvement increases, and the impact of message arguments increasing. (See Cho 1999 for a model and modification of the ELM related to involvement's influence on the motivation to process banner ads.)

Given this, two hypotheses of Petty, Cacioppo, and Schumann (1983), testing the important moderating role of involvement on message and brand attitudes, are adapted for testing:

H1: The strength of an Internet site's arguments (central route cues) should have more impact on attitudes toward the ad (A_{ad}), the brand (A_b), and purchase intentions in high vs. low involvement conditions.

H2: The peripheral cues of Internet sites will have a greater effect on brand attitudes (A_b) under low rather than high involvement.

Verification of these hypotheses establishes that changing involvement does impact the route to persuasion employed (central or peripheral) when processing Internet sites as evidenced by the impact of arguments and peripheral cues on persuasion.

These hypotheses offer insight about *how* involvement impacts the processing of Internet appeals, and extends the domain of the ELM into Internet advertising. Given that the Internet facilitates the conveyance of a great deal of information, many Internet users are searching for specific details (e.g., automobile shopping, home financing rates, or computer hardware configurations), hence highly involved. Those users of the Internet who are motivated to search for specific information will be labeled "searchers." In fact, existing research indicates that information and economic motivations are key factors for many Internet users (Korgaonkar and Wolin 1999). Alternatively, owing to casual use of the Web for entertainment, communication, or diversion, there are a number of "surfers" whose information processing is likely minimal and whose attention is difficult to capture. Knowledge of how these "searchers" and "surfers," with significantly different motivations for Internet use,[1] react to different elements of an Internet advertisement will benefit from application of the ELM through testing H1 and H2.

One final aspect of the ELM that readily presents itself for examination in this research is the question of the independence of the two routes to persuasion. MacKenzie, Lutz, and Belch (1986) believe that the ad attitude to brand cognition link ($A_{ad} \rightarrow C_b$) in models of advertising effects is at odds with the ELM. MacKenzie et al. state that the "central and peripheral processes are *intertwined* [emphasis in original] rather than substitutes for one another" (p. 132), implying that central and peripheral processing may *not* occur at the same time. However, support for the simultaneous operation of both routes is reported in the literature. Miniard et al. (1990) uphold their hypothesis that ad attitudes (more dependent on peripheral cues) can have a significant causal role on A_b formation regardless of which persuasion route is operative. Miniard et al. (1991) support that both central and peripheral cues influence intentions under conditions of *moderate* involvement. Lastly, Miniard et al. (1992) find a persistent effect of peripheral cues on brand cognitions (C_b). The authors *infer* that this provides evidence that peripheral ad elements can and do affect how an ad is processed and evaluated, regardless of the type of processing undertaken (central or peripheral).

Petty et al. (1993, p. 337-8) address these concerns, asserting that "...the ELM does not hold that a given peripheral process ... is less likely to *occur* as the elaboration likelihood is increased, but only that the peripheral process is likely to account for less variance in the attitude adopted." Hence, over time, interpretations of how the ELM treats the dual operation of central and peripheral cues under high involvement have evolved, but have yet to be directly tested. This research specifically tests the ability of peripheral cues to effect attitudes under higher involvement. Stated formally:

H3: Under conditions of high involvement both central and peripheral cues contained in an Internet site will influence brand attitudes, and purchase intentions.

Demonstrating the influence of peripheral cues on A_b and purchase intentions, even under high involvement (central route processing), asserts the important role these cues have regardless of the cognitive effort devoted to processing a Website. Further, there are significant implications for Website design given the potential impact of these peripheral elements on consumers' attitudes. This is critical as Internet technology continues to advance, allowing "richer" media content. However, developers should be confident that the added complexity and expense of these peripheral elements are beneficial before resources are committed to their development and implementation.

The hypotheses in this research allow us to begin to understand such questions as how we appeal to surfers and/or searchers on company-created Websites. Additionally, this research potentially addresses the effect rich media (enabled by Web technology) adds to a Website. Does rich media add only passing or peripheral value to minimally involved Web users, a segment that is by definition of less interest to site sponsors, or does it also positively influence those "serious" Website visitors who come to a site with high interest in its message. Not only is it likely that the ELM can assist in answering these questions, but will add depth to the findings of current nascent Internet advertising testing methodologies as well.

Methodology

A 2 x 2 x 2 between subjects factorial design was used. The first two factors manipulated in this research are involvement (higher and lower), and argument strength (stronger and weaker). The third factor is the manipulation of the peripheral cue. In place of using a peripheral cue that was either present or absent (e.g., celebrity endorser), this research employed a peripheral cue that was specifically related to the Internet and would be interpreted as positive or negative, as in the research of Miniard and colleagues. As Web pages employ a great number of executional elements (e.g., motion, animation, sounds, flashing text or graphics, or different backgrounds), one of those cues was employed—background or "wallpaper." As previously mentioned, rapid technological advancement and design refinement on the Web may quickly outdate the use of any one Website execution used in testing research hypotheses; however, as this is a test of theory, the key is to design stimuli that vary on the dimension of interest (in this case, the "look and feel" of the Website) versus any specific executional element. While the pages used in this study (conducted in Fall 1997) may look slightly dated today, they reflected current Web design practices of the time.

Focal Product

In order to provide a realistic Internet shopping experience for subjects and enhance external validity a product category was sought that would: 1) be of interest to the subjects, and 2) reflect Internet shopping behaviors. According to the *Wall Street Journal* (March 27, 1997), 44% of all Internet users had shopped for goods on-line at that time. Of the on-line shoppers, 11% reported purchasing computer software—the highest of any good. (Computer software is still the third most often purchased good on the Web, behind books and music CDs; eMarketer 2000b.) Given that, and the general familiarity of the experimental subjects (university students) with computer software, a "new" word processing package was chosen as the focal product. While acknowledging that the "suitability" of any product's marketing on the Internet is largely dependent on its characteristics (Peterson et al. 1997), to date few product categories appear more adaptable to Internet marketing than computer software.

Numerous Internet sites were viewed to gain familiarity with how software was presented on the WWW at the time. Drawing on observed Website layout, the basic Website design was completed for the pre-tests and experiment, including development of artwork for the product box on the "home page."

Pre-tests

Four pre-tests were conducted prior to the final experiment to establish the experimental manipulations and are detailed below. The pre-tests were conducted using pen and paper responses, and either printed booklets, or color overheads (transparencies) as stimuli. The population for the pre-tests was similar to the final subject pool.

The first pre-test was on two elements: A verbal only involvement manipulation, and a pair of arguments (strong and weak). As a result of this pre-test it was determined that a lottery drawing to win the product of choice was going to have to be added to stimulate higher interest. The argument strength required two more pre-tests to establish the desired stimuli. (Pre-tests two and three focused on developing arguments for the Web pages.)

The forth pre-test was designed to select the peripheral cues (wallpaper) to be used. In consultation with a leading authority in the field (Miniard 1997), it was felt that simply including or eliminating a peripheral cue may not work in this context. Based on this concern, negative and positive peripheral cues were developed.

After considering several possibilities, alternatives were developed for pre-testing, with two elements being varied. First, three color schemes were selected: a muted gray pattern with feint multi-colored diagonal lines; a solid orange color; and a solid olive color. Size variations of the "blocks" to be used were also tested with each of the previous color schemes produced in either a "small" or "large" versions. The small gray pattern produced a "tile" effect, while the large gray pattern produced a seamless background. Size variations with the solid colors result in two distinct checkerboard patterns.

To test the six potential backgrounds (2 sizes X 3 colors), the four 7-point measures of Miniard et al. (1990) of non-claim components of an ad ($A_{ad\text{-}nc}$) were used: attractive/unattractive; favorable/unfavorable; appropriate/inappropriate; and likable/unlikable. The six backgrounds were then reproduced on color overheads that included Netscape control areas and portions of the strong arguments. These overheads were then shown, one at a time, to sixty undergraduate students (different subjects from other pre-tests). Subjects were asked to rate each of the overheads on the proceeding scale. As an additional check, subjects were shown a final overhead with all six patterns reproduced, and asked to rank the patterns "in what you think would make the best to worst Website."

Reliabilities for the four item scale were outstanding across all six overheads (α=.91, .90, .96, .96, .93, and .91), and on a scale from 4 to 28 the screen ratings were (in best/worst order): 12.93 (small/gray), 14.05 (large/gray), 20.19 (small/olive), 20.98 (small/orange), 21.49 (large/olive), and 22.24 (large/orange). Combined with the fact that the two gray patterns each received an equal number of first and second choice rankings, the small gray pattern was selected as the positive peripheral cue. Validating the large/orange pattern's lowest rating, it was also ranked last or second to last by 31 subjects, and last by four more subjects than any other pattern.

A sample of the final Homepage resulting from the argument strength and peripheral cue pre-tests is reproduced in Figure 1a. Additionally, in the final experiment the Homepage contained hyperlinks to two additional pages: one detailing the printers supported, another containing graphs detailing the RAM and hard disk requirements (Figures 1b and 1c). These additional links added to the realism of the Web page by providing a level of user-controlled interactivity, as well as increasing the amount of information users could choose to access. These three Web pages formed the experimental stimuli.

In addition to the pre-tests, several manipulation checks were performed and are reported in the results section.

Subjects and Design

Two hundred twenty-four university students from a large southeastern state university participated in the experiment. Student subjects were recruited through classroom announcements and bulletins. A three-dollar inducement was offered to each participant in the experiment. The experiment took, on average, 17.45 minutes (SD=5.29 minutes), with a range of seven to thirty-nine minutes.[2] Fifty-eight percent of the subjects were female, 6.3% were underclassmen, 86.3% upperclassmen, and 5.4% graduate students. Subjects ranged in age from 18 to 55, with an average of 26.8 (SD=6.95).

To help maintain external validity and mimic an online experience, the experiment was run on IBM compatible personal computers. Each computer used Netscape Navigator 3.0 to access a series of "pages" (written in HTML by the first author) that included both directions for the experiment, and the experimental stimuli. These "pages" were stored locally on a floppy drive to ensure constant access times between subjects.

Task and Procedure

Subjects were processed one at a time in a computer lab with the files installed on 24 PCs (each condition on three workstations). Subjects were randomly assigned to one of the eight experimental treatments upon entering the lab.

On-screen instructions were closely keyed to a printed response booklet that was the same for all subjects. Both the response booklet and the computer screens made frequent references to each other to ensure respondents could follow the instructions (e.g., "You should be finished with your review of the Website and still on PAGE 3 of the Response Booklet"). No indication was received during the course of the experiment that subjects were aware of the fact that different stimuli were presented on different workstations.

Each screen had a blue arrow (a hyperlink) on the bottom with the word "next" written below it. These arrows functioned as buttons advancing subjects to the next screen throughout the experiment. (The collateral Web Pages also had "back" buttons to return

Figure 1a
Screen Capture[1]

[1]NOTE: Text in the "Location" box did not reveal that the files were stored locally.

Figure 1b
Screen Capture

Netscape: WriteWrite Supported Printers

Back | Forward | Home | Edit | Reload | Images | Print | Find | Stop

Location: file:///STUDY1/PRINT.HTM

What's New? | What's Cool? | Destinations | Net Search | People | Software

WriteRight Supported Printers

brother	HL1260, HL630, HL630M, HL645, HL645M, HL655M, HL660, HL660PS, HL720, HL730DX, HL760, HL960, HL-1060 LASER, HL1660N LASER.
Canon	BJC-7000, BJC-4300, BJC-4304 Photo, BJC-80, BJC-250, BJC-620, BJC-4550, BJC-4200, BJC-4200 Photo, BJC-240, MultiPASS C3000, MultiPASS C2500
EPSON	Stylus 1000, Stylus Color, 1100 ACTIONLaser, 1400 ACTIONLaser, Stylus IIS, Stylus II, Stylus Pro XL, Stylus Pro, Stylus 1500, Stylus 500, Stylus 200, Stylus 600 ,Stylus 800, EPL-N1200, Stylus 400, EPL-N2000, Stylus 1520, Stylus 3000
HEWLETT PACKARD	LASERJET PRINTERS: LaserJet 6Lse, LaserJet 6Lxi, LaserJet 6P/6M, LaserJet 6Pse, LaserJet 6Pxi, LaserJet 5, LaserJet 5M, LaserJet 5N, LaserJet 5se, Color LaserJet 5, Color LaserJet 5M, LaserJet 4V, LaserJet 4MV DESKJET PRINTERS: DeskJet 340, DeskJet 400L, DeskJet 670C, DeskJet 672C, DeskWriter 680C, DeskJet 692C, DeskJet 694C, DeskJet 820Cse, DeskJet 820Cxi, DeskJet 870Cse, DeskJet 870Cxi, DeskJet 1000C, DeskJet 1600C, DeskJet 1600CM, DeskJet 1600CN.
PRINT LEXMARK	Complete Optra Series, ExecJet 4072, ExecJet IIC, JetPrinter 1020, JetPrinter 2030, JetPrinter 2050, JetPrinter 2055, JetPrinter 2070, JetPrinter 3000, JetPrinter 4079 Plus, JetPrinter 7000, ValueWriter 4039, WinWriter 150C, WinWriter 600D.
NEC	SILENTWRITER 1760, SILENTWRITER 1765, SUPERSCRIPT 860 LANCRUISER PLUS, SuperScript 610+, SuperScript 660, SuperScript 660I, SuperScript 660 Plus, SuperScript 860, SuperScript Color 3000, SUPERSCRIPT 100C INKJET PRINTER, SuperScript 1260, SuperScript 1260N.
OKIDATA	OL400, OL830+, OL850, OL400E, OL410E, OL410E/PS, OL1200, OL1200PS, OL810e, OL600e, OL610e PS, OL810EPS, OkiPage 4W, OkiPage 16N, OL610es Parallel, OkiJet 2010, OL800, OL810, OL820, OL830, OL840, OL850, DOC-IT 3000, DOC-IT 4000, OL610es Serial, OkiJet 2020, Okipage 6e, OKIPAGE 6ex.

Other printer drivers available from manufacturers

Figure 1c
Screen Capture

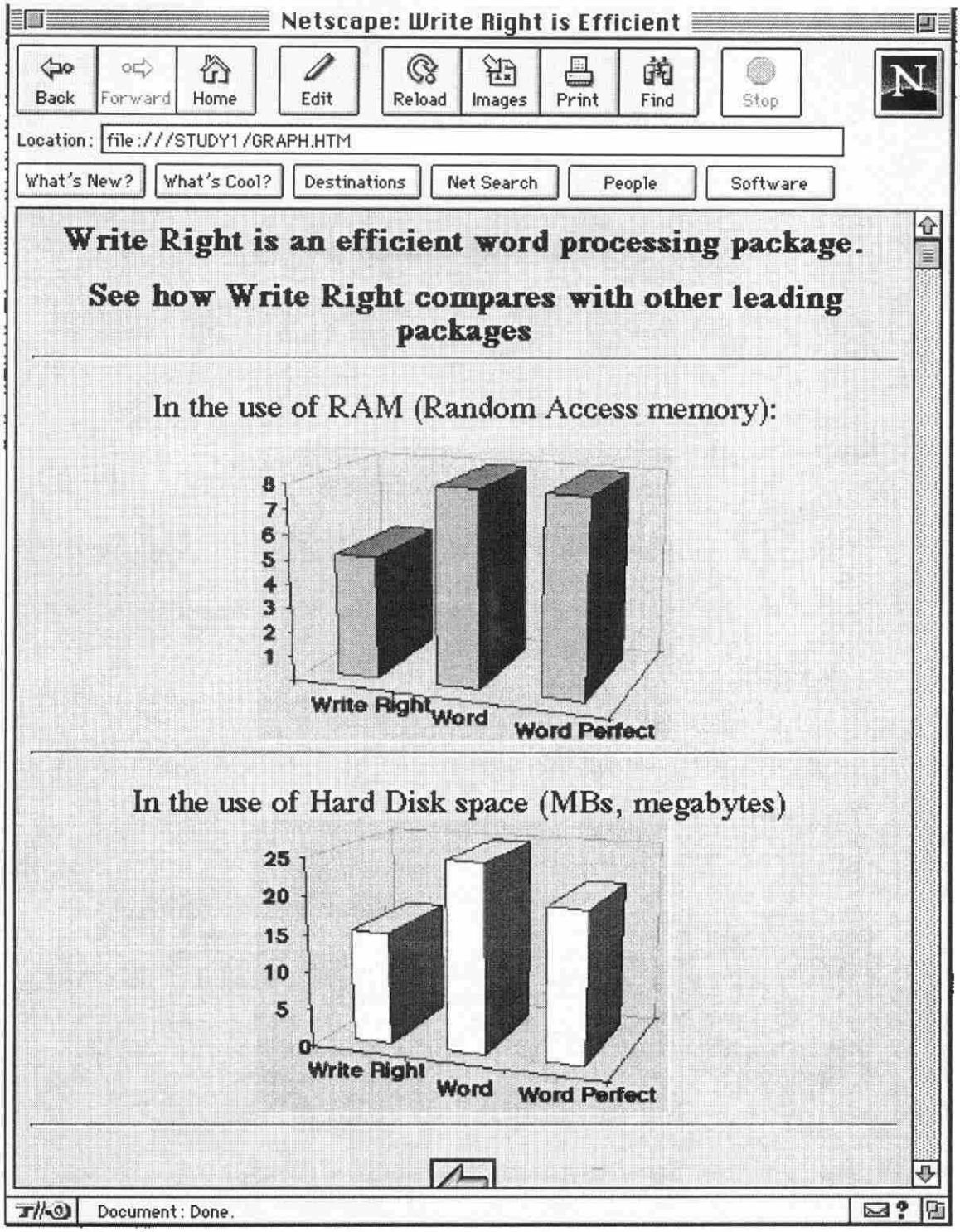

Table 1
Sample Screen

From this point forward, please follow the directions on the computer screen and in your RESPONSE BOOKLET.

The directions are keyed to both the page numbers and question numbers in this booklet, and the screen numbers displayed on the bottom right of the screen in red (you may have to scroll down to see these numbers).

Before we begin with the actual study, we would like to ask a few questions so we can learn something about you. There are no right or wrong answers, just tell us your opinion.

At this time, please turn to PAGE 2 in the Response Booklet, and answer questions 2—27 (this will take you to PAGE 3 of the Response Booklet).

When you are done with Question 27, CLICK the NEXT button to continue

Figure 2
Screen Capture-WriteWare

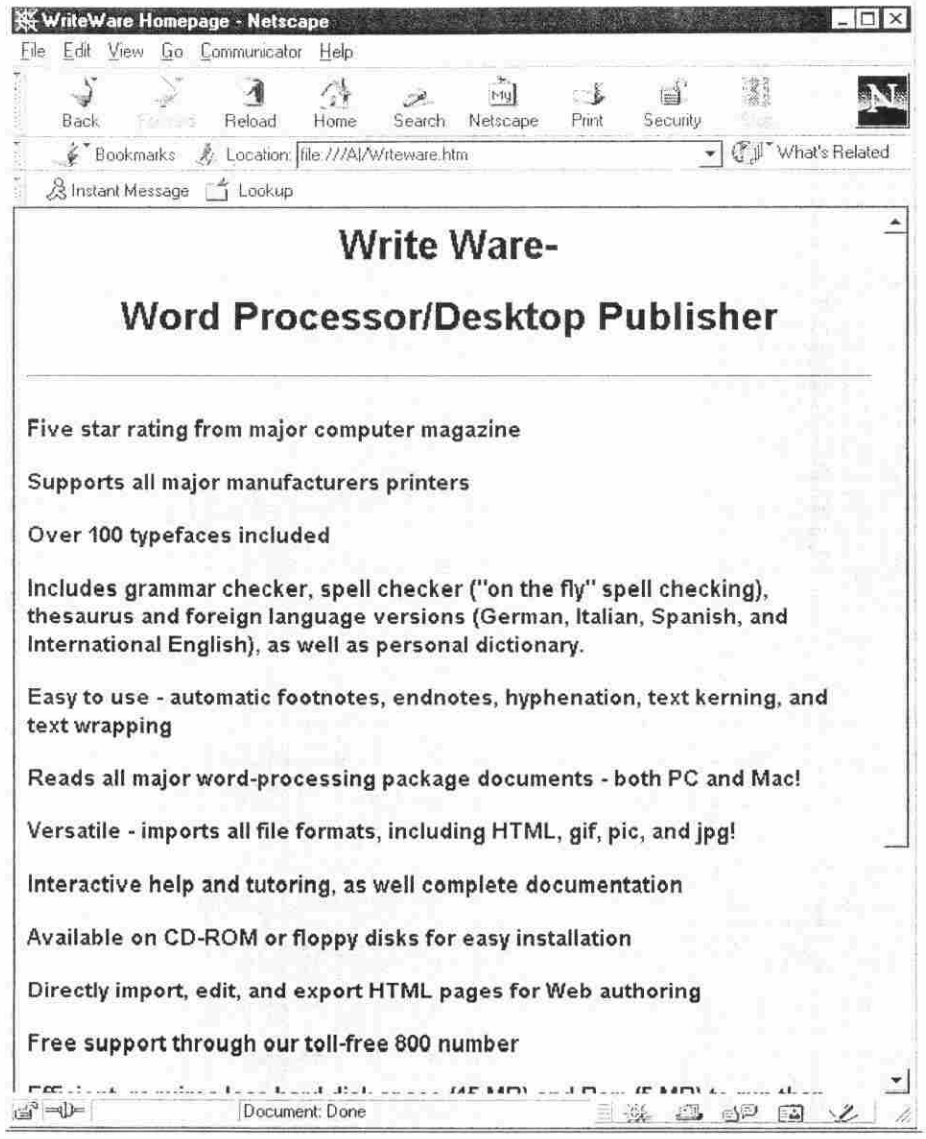

Table 2
Arguments

STRONG ARGUMENTS

Five star rating from major computer magazine

"An outstanding performer and great value!" *PC World*

"There is no reason not to buy this software." *PC Family Computing*

Supports all major manufacturers printers
(HP, Epson, Canon, Lexmark, Okidata, Brother, and NEC)

Over 100 typefaces included
(Including: Times, Helvetica, Geneva, Courier, OCR, Palatino, Hoefler, Chicago and more!)

Includes grammar checker, spell checker ("on the fly" spell checking), thesaurus and foreign language versions (German, Italian, Spanish, and International English), as well as personal dictionary.

Easy to use—automatic footnotes, endnotes, hyphenation, text kerning, and text wrapping

Reads all major word-processing package documents—both PC and Mac!

Versatile—imports all file formats, including HTML, gif, pic, and jpg!

Interactive help and tutoring, as well complete documentation

Available on CD-ROM or floppy disks for easy installation

Directly import, edit, and export HTML pages for Web authoring

Free support through our toll-free 800 number

Efficient, requires *less* hard disk space (15 MB) and Ram (5 MB) to run than other leading packages. Compare:

Only $89.95!

WEAK ARGUMENTS

Only $89.95!

Supports Okidata printers
(other printer drivers available for download on Website, HP Printers require special software from the manufacturer)

Includes four standard fonts
(Courier, Geneva, Times and Helvetica)

Spell-checker module available for only $19.95

Rated "Two stars" (out of five) from a major computing magazine

"A good value, and an acceptable performer." *PC World*

"If you are looking for a basic, starter Word Processing program, this may well be it." *PC Family* Computing

Text wrapping

Reads documents from WordPerfect

Can import PIC and TIFF graphic files

Easy installation from 30 floppy disks

On-Line help available. Complete printed documentation available for $19.95

Web page authoring add-on package available for $19.95

Phone support available for $.95 a minute through our 900 number.

Requires 20 MB of hard disk space and 8 MB of RAM. Compare with other leading software application.

to the prior screen.) The text of screen two is reproduced in Table 1, and exemplifies the type of instructions subjects received.

After completing preliminary measures unrelated to this investigation, subjects reached the involvement manipulation (detailed shortly). Next, subjects reviewed the home page for the focal brand "Write Right" software, and as many of the two additional support pages as they wished (the average subject looked at .834 additional pages, with 43.5% of the subjects viewing no additional pages, 29.6% viewing one additional page, and 26.9% viewing both additional pages). After viewing the homepage, subjects returned to the response booklet where they completed the thought listing task. In order to support the choice manipulation of high involvement subjects, they were told: "We will now ask you to study the second software package. Please look at it carefully, as you will be asked to choose between the two." Low involvement subjects were simply told: "A second Web Page has also been developed. Please take a moment to review it also." The second Website for the "Write Ware" software package had a plain gray background, no pictures, and the strong arguments with no hyperlinks or product picture (see Figure 2).

Following review of both Websites, subjects' involvement was measured, as well as their ad and brand attitudes. Next came a series of product belief statements (detailed in the argument strength manipulation section) and intent measures. All subjects then completed the remainder of the response booklet including demographic measures. There were 11 Web pages of instructions or stimuli in total.

After all measures had been collected a final screen informed all subjects of the true nature of the experiment, and the fictitious nature of the software. In lieu of giving away copies of the software a $100 cash prize was awarded via lottery to ten subjects. In the interest of fair play, low involvement subjects were also included in the lottery.

Involvement Manipulation

As in prior research (cf. Celsi and Olson 1988; Miniard et al. 1990; Petty et al. 1983), the involvement manipulation consists of varying the amount of personal relevance of the observed Websites. Based on the pre-test results, the high and low involvement conditions were manipulated as follows. Higher involvement was stimulated in two ways. First, subjects were told that the software product was real and would be introduced in the market. Second, as the experiment proceeded, high involvement subjects were reminded that they would be entered into a lottery to actually win their product of choice. Low involvement subjects were asked to "look through the following site(s) as you normally would when browsing or just 'surfing the Net.'"

Argument Strength Manipulation

The argument strength manipulation is critical in detecting the type of processing (central or peripheral) undertaken. As indicated by Areni and Lutz (1988), and used in prior studies (Miniard et al. 1990), the claim manipulation largely involved manipulating argument strength (determined through pre-tests) rather than valence. Table 2 shows the final arguments (strong and weak). The number of arguments was consistent across conditions eliminating a potential peripheral cue.

Measures

Involvement. As in all measures, seven point scales were used. The four involvement measures were: While going through the ad [simulated Website] I was: very involved/very uninvolved; concentrating very hard/concentrating very little; paying a lot of attention/paying little attention; and: I carefully considered the claims in the simulated Website (strongly agree/strongly disagree). Aside from being used as a manipulation check, these items are also used as a measure of self-reported involvement, detailed shortly.

Argument Strength. In order to assess argument strength, attitudes towards the site's claims ($A_{ad\text{-}c}$, Miniard et al. 1990) was used. Subjects were asked, "How would you evaluate the *claims* made about the software?" and responded to four items: persuasive/unpersuasive; informative/uninformative; strong/weak; and believable/unbelievable.

Peripheral Cues. The four measures employed in pre-test four of attitudes towards the non-claim components of the Website ($A_{ad\text{-}nc}$) were also used in the final experiment.

Thought Listing. After exposure to the varied treatments, subjects were asked to provide their thoughts on a blank, lined page. The instructions were "...list all thoughts, ideas, and images that occurred to you while looking at the Write Right Website."

Response coding procedures for these measures followed those established by Wright (1980) and used by Miniard et al. (1990). During coding two persons, unaware of the experimental condition, worked independently first breaking responses into separate thoughts. Next, each thought was classified as either a brand- or ad-related thought, a global evaluative thought, or irrelevant. At this stage of the coding, following Miniard et al. (1990), thoughts not related to the experimental stimuli were discarded. The total number of (relevant)

Table 3
Cell Means

	Higher Involvement				Lower Involvement			
	Stronger Claims		Weaker Claims		Stronger Claims		Weaker Claims	
	+ Cue	- Cue	+ Cue	- Cue	+ Cue	- Cue	+ Cue	- Cue
Involvement	4.21	3.84	3.65	3.41	3.37	3.35	3.29	3.43
	(1.41)	(1.34)	(1.53)	(1.31)	(1.75)	(1.83)	(1.44)	(1.88)
#Total Thoughts	3.00	3.35	3.07	2.75	3.29	2.74	4.04	3.63
	(1.05)	(1.88)	(1.71)	(1.17)	(1.49)	(1.38)	(2.05)	(2.69)
# Brand Thoughts	1.11	0.69	1.55	0.50	0.86	0.07	1.64	0.67
	(1.26)	(1.73)	(1.84)	(0.79)	(1.27)	(0.27)	(1.93)	(2.09)
# Ad Thoughts	.86	2.00	0.79	1.68	1.43	1.96	1.46	1.70
	(.93)	(1.56)	(0.82)	(1.06)	(1.48)	(1.45)	(1.45)	(1.44)
Intent	3.55	3.36	2.99	2.51	3.26	3.30	2.49	2.98
	(1.83)	(1.48)	(1.70)	(1.49)	(1.63)	(2.13)	(1.53)	(1.87)
Brand Attitude (A_B)	4.98	4.43	3.72	3.70	4.15	4.28	3.63	3.78
	(1.29)	(1.12)	(1.17)	(1.36)	(1.68)	(1.81)	(1.32)	(1.73)
Ad Attitude (A_{ad})	4.50	3.23	3.11	2.71	3.51	3.04	2.94	2.79
	(1.59)	(1.55)	(1.52)	(1.35)	(1.86)	(1.88)	(1.61)	(2.02)
Ad Claim Att. ($A_{ad\text{-}c}$)	5.03	4.27	4.12	3.99	4.64	4.10	3.57	3.57
	(1.29)	(1.37)	(1.27)	(.99)	(1.30)	(1.68)	(1.46)	(1.65)
Non-Claim Att.	4.76	3.51	3.95	3.01	4.12	3.36	3.75	3.02
($A_{ad\text{-}nc}$)	(1.17)	(1.17)	(1.40)	(1.76)	(1.76)	(2.08)	(1.76)	(1.77)

Note: Standard Deviations in Parenthesis

thoughts and number of brand thoughts were used for analysis. Given the specificity of the coding instructions, the coders agreed on 93% of their classifications. Disputes in coding were resolved by one of the authors.

Results

Analyses

In order to facilitate discussion and interpretation, when multiple measures are combined, the resulting construct is reported in its original 7-point metric. Scales have been reversed so that "7" is the highest, or most positive response, and "1" the least likely or favorable response. Table 3 presents the cell means and standard deviations for involvement, thought counts, and intent, as well as brand and ad attitude measures for each of the eight experimental conditions.

Reliability and Manipulation Checks

Involvement. The four involvement items were combined into one scale exhibiting excellent reliability (α=.92). The mean of involvement scores across the eight treatment cells ranged from 3.29 to 4.21. As in previous work, the involvement manipulation was not expected to produce absolute high and low levels of involvement, but rather higher and lower involvement levels. Previous researchers have detailed the difficulty in achieving low involvement in experimental settings (Miniard et al. 1990). Possibly owing to the general high level of interest in the Internet, achieving different levels of involvement was especially challenging in this research.

There were statistically significant differences ($F=3.88$, $p < .05$) between the higher ($M=3.78$, $SD=1.41$) and lower involvement ($M=3.36$, $SD=1.71$) subjects. Further, the involvement manipulation did not interact ($p \geq .25$) with any of the other manipulations.

Given the low level of practical difference (.42 on a seven-point scale) induced by the involvement manipulation, subjects' *self-reported* involvement (SRI) is also used. (Other studies on the ELM and Internet have relied solely on SRI, e.g., Cho 1999.) The high and low self-reported involvement groups were formed using a near-mean split on the involvement

Table 4
Brand Belief Statements

The Write Right Word Processing software supports many printers
There are a lot of fonts included with this software
This software is highly rated by computer magazines
This software is easy to install
This software has many useful features
The supporting documentation include with this software is excellent
The hardware requirements for this software are very favorable
The support provided for this software package is excellent
Coefficient α=.82, all measures strongly agree/strongly disagree

construct (M=3.57). Those above the mean were classified as higher self-reported involvement subjects (HSRI, M= 4.90, SD=.89, n=108), and those below the mean as lower self-reported involvement subjects (LSRI, M=2.29, SD=.87, n=112). ANOVA shows there are no significant interactions between SRI and other manipulated factors (p>.22). In addition, the higher SRI group had a significantly (F=8.26, p<.001) greater number of thoughts (M=3.11, SD 1.71) than the LSRI group (M=2.29, SD=1.31), and spent significantly (F=8.51, p<.01) more time on the experiment (18.52 vs. 16.46 minutes), enhancing the validity of this measure.

While manipulated involvement produced marginal practical differences, SRI does adequately capture high and low levels of involvement by the subjects (a difference of 2.71 on a 7-point scale). Given this, both involvement measures are used to test the hypotheses in this research.

Argument Strength. The four $A_{ad\text{-}c}$ measures were combined into one scale with excellent reliability (α=.91) with a mean of 4.16 (SD=1.45). ANOVA verified that the different argument strength manipulations shown in Table 1 produced significant (F=13.70, p<.01) differences in $A_{ad\text{-}c}$. Involvement also influenced $A_{ad\text{-}c}$ (F=4.17, p<.05) with no other two-way interactions

As an additional check on the argument strength manipulation, eight items measuring specific brand beliefs/product attributes (Table 4) were also tested (these will be called the brand belief statements). ANOVA analysis on the brand belief statements reveals a significant effect for argument strength (F=19.37, p< .001) and no interactions. Together these results demonstrate concurrent validation of the success of the argument strength manipulation in performing as expected.

Peripheral Cues. Main effects for the peripheral cue were found for both $A_{ad\text{-}nc}$ and A_{ad} ($A_{ad\text{-}nc}$: F=16.58, p<.001; A_{ad}: F=6.43, p<.05), demonstrating the manipulation was successful. In order to establish that the peripheral cue served *only* as an executional cue and was devoid of product information, ANOVA analysis was also conducted on $A_{ad\text{-}c}$ and brand belief statements. The peripheral cue *did not* have an effect on beliefs about the informational components of the brand ($A_{ad\text{-}c}$: F=3.62, p>.05; Brand Beliefs: F=1.03, p>.10), hence the peripheral cue does not serve as an argument.[3]

Lastly, argument strength also had a significant influence (F=4.88, p< .05) on $A_{ad\text{-}nc}$, with those viewing the stronger arguments rating the non-claim component better (M=3.94) than those receiving weaker arguments (M=3.44).

External Validity. One potential weakness of prior research on the ELM has been the artificial nature of the stimuli. As the stimuli in this experiment were designed to mimic an on-line experience at the time the experiment was conducted, realism was assessed with three measures using seven point scales (1 being very realistic), resulting in a final scale ranging from 3 to 21. The items were combined into a single scale with high reliability (α=.90). Indicators of the external validity of the stimuli can be found in that 25.9 percent of the subjects rated the stimuli as "1 or 2" on each item, while only 8.4 percent of the subjects rated each of the three measures as "6 or 7" (the scale mean was 10.3, SD=4.8). Only the peripheral cue (F=9.28, p<.01) significantly interacted with realism. Those subjects receiving the positive peripheral cue perceived the experiment as more realistic (M=9.32, SD=4.73) than those seeing the negative checkered background (M=11.30, SD=4.69). The attempt to validate the realism of the experiment is important as duplication of the realistic "look and feel" of the experimental stimuli helps establish this research as a valid attempt to extend the domain of the ELM to Internet advertising.

Given the acceptability of the experimental stimuli, interactions and additional main effects on DVs notwithstanding, the manipulations were judged successful.

Table 5
ANOVA Results: Manipulated Involvement

PANEL A: RESULTS FOR A_{ad}					
Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Sig of F*
Main Effects					
Involvement (INV)	5.650	1	5.650	2.000	.159
Argument Strength (AS)	25.565	1	25.565	9.049	.003
Peripheral Cue (PC)	18.153	1	18.153	6.426	.012
2-Way Interactions					
INV X AS	4.077	1	4.077	1.443	.231
INV X PC	3.838	1	3.838	1.358	.245
AS X PC	4.997	1	4.997	1.769	.185
3-Way Interactions					
INV X AS X PC	1.003	1	1.003	.355	.552
Corrected Model	63.436	7	9.062	3.208	.003
Error	604.561	214	2.825		
Corrected Total	667.996	221			

PANEL B: RESULTS FOR A_b					
Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Sig of F*
Main Effects					
Involvement (INV)	3.963	1	3.963	1.884	.171
Argument Strength (AS)	29.338	1	29.338	13.944	.000
Peripheral Cue (PC)	.508	1	.508	.241	.624
2-Way Interactions					
INV X AS	2.538	1	2.538	1.206	.273
INV X PC	3.102	1	3.102	1.474	.226
AS X PC	.734	1	.734	.349	.555
3-Way Interactions					
INV X AS X PC	.594	1	.594	.282	.596
Corrected Model	40.928	7	5.847	2.779	.009
Error	450.269	214	2.104		
Corrected Total	491.198	221			

PANEL C: RESULTS FOR INTENT					
Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Sig of F*
Main Effects					
Involvement (INV)	.274	1	.274	.093	.761
Argument Strength (AS)	19.933	1	19.933	6.757	.010
Peripheral Cue (PC)	.211	1	.211	.071	.790
2-Way Interactions					
INV X AS	.184	1	.184	.062	.803
INV X PC	5.689	1	5.689	1.928	.166
AS X PC	.208	1	.208	.070	.791
3-Way Interactions					
INV X AS X PC	1.429	1	1.429	.484	.487
Corrected Model	105.386	7	3.954	1.340	.233
Error	628.313	213	2.950		
Corrected Total	655.992	220			

Table 6
ANOVA Results: Self-Reported Involvement

PANEL A: RESULTS FOR A_{ad}					
Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Sig of F*
Main Effects					
Self-reported Involvement (SRI)*	173.754	1	173.754	84.066	.000
Argument Strength (AS)	13.335	1	13.335	6.452	.012
Peripheral Cue (PC)	10.847	1	10.847	5.248	.023
2-Way Interactions					
SRI X AS	2.520	1	2.520	1.219	.271
SRI X PC	1.759	1	1.759	.851	.357
AS X PC	1.796	1	1.796	.869	.352
3-Way Interactions					
SRI X AS X PC	.152	1	.152	.074	.786
Corrected Model	224.745	7	32.106	15.534	.000
Error	436.109	211	2.067		
Corrected Total	660.853	218			

PANEL B: RESULTS FOR A_b					
Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Sig of F*
Main Effects					
Self-reported Involvement (SRI)	63.161	1	63.161	35.131	.000
Argument Strength (AS)	19.163	1	19.163	10.658	.001
Peripheral Cue (PC)	0.077	1	0.077	0.043	.835
2-Way Interactions					
SRI X AS	11.859	1	11.859	6.596	.011
SRI X PC	0.897	1	0.897	0.499	.481
AS X PC	0.129	1	0.129	0.072	.789
3-Way Interactions					
SRI X AS X PC	0.882	1	0.882	0.490	.484
Corrected Model	150.389	7	15.055	8.374	.000
Error	379.354	211	1.798		
Corrected Total	484.741	218			

PANEL C: RESULTS FOR INTENT					
Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Sig of F*
Main Effects					
Self-reported Involvement (SRI)	89.593	1	89.593	35.779	.000
Argument Strength (AS)	12.694	1	12.694	5.069	.025
Peripheral Cue (PC)	.213	1	.213	.085	.771
2-Way Interactions					
SRI X AS	4.134	1	4.134	1.651	.200
SRI X PC	12.488	1	12.488	4.987	.027
AS X PC	.001	1	.001	.000	.995
3-Way Interactions					
SRI X AS X PC	.003	1	.003	.013	.910
Corrected Model	125.933	7	17.990	7.185	.000
Error	525.851	210	2.504		
Corrected Total	651.784	217			

*** As a mean split was used, the inclusion of SRI on these ANOVA Tables only has implications for the interaction terms.**

H1: Moderating Effect of Involvement on Argument Strength

ANOVA was used to determine the moderating effects of involvement on ad and brand attitudes and intentions. There is no interaction between manipulated involvement or SRI and argument strength ($p>.23$) for A_{ad}, purchase intentions, or $A_{ad\text{-}c}$, hence no moderating effect of involvement. In fact, the only support for H1 is that SRI does moderate the effect of involvement on A_b (interaction: $F=6.60$, $p<.05$).

All told, the findings with involvement on ad and brand attitudes, and intentions do not support H1. These results indicate that much more testing may be needed before this aspect of the ELM is extended to Internet promotion. The results of this experiment, using both manipulated and self-reported involvement, calls into question the moderating effects of involvement on argument strength – surfers and seekers generally reacted *similarly* to the *information* contained in these Internet promotion, not differently as the ELM predicts.

H2: Moderating Effect of Involvement on Peripheral Cues

The ELM predicts that the effects of peripheral cues on brand attitudes will be moderated by involvement. ANOVA (Tables 5 and 6) reveals no interaction between the peripheral cue and either manipulated involvement ($F=1.47$, $p>.22$) or SRI ($F=.50$, $p> .48$) on these attitudes. The same is true using the brand belief statements as well (involvement: $F=.731$, $p>.39$, SRI: $F=.39$, $p>.53$). Again, from these results it appears that, unlike previously tested mass media, the ELM needs further testing before it can be applied to Internet advertising.

Results from this experiment indicate that, when processing Internet sites, peripheral cues may have little influence on brand attitudes. This finding could be viewed as surprising given how distracting the negative peripheral cue in this experiment was. It appears that even for those Internet users for whom we expect peripheral cues to have the greatest effect—the surfers—these cues have little impact.

H3: Influence of Peripheral Cues Under High Involvement

ANOVA reveals that peripheral cues have no statistically significant effect on A_b under either high involvement condition (manipulated: $F=2.05$, $p>.15$; SRI: $F=.733$, $p>.54$) or on intent (manipulated: $F=1.55$, $p>.20$; SRI: $F=2.313$, $p>.13$). While the evolving conceptualization may be that peripheral cues *do* operate under higher involvement, in a test with good power (.235) the peripheral cue did not influence brand attitude or intent in this test of Internet advertising. This is contrary to Miniard et al.'s (1992) findings, so once again we see an indication of differences between the Internet and mass-media communications.

The rejection of H3 leaves open the question of how and when peripheral cues may influence attitudes and intentions, hence brand choice, in this medium. Is this influence a function of context (media), or the specific cues employed? Overall, when teamed with the results from H2, the lack of the moderating effects of involvement on peripheral cues, one cannot help questioning the role of peripheral cues with Internet promotions.

Discussion

Given the surprising lack of support for adaptation of the ELM to the Internet, this discussion begins by reviewing the importance of replication in research, Next, limitations of this study will be explored, and general discussion provided. This section will conclude with directions for future research.

Replication

Findings in this study are contrary to previous results and demonstrate the value of replication–especially when new domains are being considered. As the ELM has been tested largely in print media settings, one could easily question its robustness in electronic, interactive, and information rich media such as the Internet (Schwartz 1997). The boundaries imposed by one-way communication on persuasion are obvious and well known. Most telling, it is highly unlikely that static print copy and visuals (again, like most current tests of the ELM) can be as effective as more interactive persuasive attempts. What this research shows is that a new medium may fundamentally affect the ways ads are processed.

Hopefully, this "systematic" replication of the ELM fulfills Monroe's criteria of "articles that clarify and review existing knowledge and theories" (1994, p. ii). It would appear that there is, with the findings of this research, evidence of differences between the Internet and mass media and support for the belief that Internet advertising is different from other media.

Limitations

Overall, the attempt to design realistic stimuli and random assignment of subjects to treatment condi-

Table 7
ANOVA Results: High Involvement Subjects

PANEL A: RESULTS FOR MANIPULATED INVOLVEMENT AND A_b

Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Sig of F*
Main Effects					
Argument Strength (AS)	25.255	1	25.255	16.455	.000
Peripheral Cue (PC)	3.146	1	3.146	2.050	.155
2-Way Interactions					
AS X PC	1.361	1	1.361	.887	.348
Corrected Model	29.459	3	9.820	6.398	.000
Error	168.833	110	1.535		
Corrected Total	198.292	113			

PANEL B: RESULTS FOR MANIPULATED INVOLVEMENT AND INTENT TO BUY

Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Sig of F*
Main Effects					
Argument Strength (AS)	12.245	1	12.245	4.597	.034
Peripheral Cue (PC)	4.136	1	4.136	1.553	.215
2-Way Interactions					
AS X PC	0.280	1	0.280	0.105	.747
Corrected Model	16.241	3	5.414	2.033	.114
Error	290.321	109	2.663		
Corrected Total	306.562	112			

PANEL C: RESULTS FOR HIGH SRI AND A_b

Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Sig of F*
Main Effects					
Argument Strength (AS)	29.851	1	29.851	15.337	.000
Peripheral Cue (PC)	.733	1	.733	.377	.541
2-Way Interactions					
AS X PC	.822	1	.822	.422	.517
Corrected Model	31.737	3	10.579	5.435	.002
Error	200.470	103	1.946		
Corrected Total	232.208	106			

PANEL D: RESULTS FOR HIGH SRI AND INTENT TO BUY

Source of Variation	*Sum of Squares*	*DF*	*Mean Square*	*F*	*Sig of F*
Main Effects					
Argument Strength (AS)	15.392	1	15.392	4.539	.036
Peripheral Cue (PC)	7.845	1	7.845	2.313	.131
2-Way Interactions					
AS X PC	0.001	1	0.001	0.004	.949
Corrected Model	22.269	3	7.423	2.189	.094
Error	349.293	103	3.391		
Corrected Total	371.562	106			

tions did much to buttress the conclusions reached in this study. Even so, certain limitations of this study are acknowledged.

While the technology and executional options for Internet Web sties change quickly, and will rapidly obsolete almost any stimuli, realism helps establish valid tests of theory. In a dynamic medium such as the Internet, special care must be made in designing realistic stimuli. Additionally, and perhaps more fundamentally, perhaps broad scales of "realism" need to be more carefully developed and researchers encouraged to report the perceived realism of their experimental stimuli. While around one-quarter of the subjects in this experiment found the stimuli to be very realistic, that the scale mean hovers around the mid-point is troubling. However, with no other studies to compare measures with, we are not alarmed.

Another limitation of this research is that it uses a product category that could be viewed largely as a search (versus experience or credence; Zeithaml 1981) good. While this classification is most often employed in services research (e.g., Ostrom and Iacobucci 1995), given the capability of Web sites to provide as much information, in as many forms, as any individual may wish—and to do so interactively—investigating consumer processing of all types of goods and services is certainly called for.

The greatest challenge of this research was the treatment of involvement. While pre-testing assured both the argument strength and peripheral cue manipulations performed as required, the involvement manipulation proved more troublesome. This speaks not only to the continued difficulty of manipulating involvement in general, but how truly difficult it may be when conducting research with the Internet. Barely a day passes without a news item regarding "e-commerce." High consumer interest in the Internet is demonstrated both by steadily increasing rates in household connectivity and shopping. Surely this hyperbole motivates increased interest in all things Web-related. Moreover, even a surfer must occasionally click on an Internet site to move on, so even low involvement will likely require higher involvement than other, more passive, media.

The use of both manipulated and self-reported involvement attempts to overcome these challenges, and the consistent findings regardless of the manipulation method used helps support the conclusions of this study. Although we are beginning to explore the full range of effects in the person-technology interface (e.g., Agarwal and Karahanna 2000), a thorough understanding of the effects of involvement on Internet searchers and surfers is crucial.

In addition, the use of the "busy" wallpaper may represent an extreme of annoying or even distracting executions of what is found on Websites. However, whether the wallpaper was more extreme or distracting than other Web "tricks," or even lengthy download times, should not be assumed. While, realism was affected by the wallpaper ($F=9.525$, $p>.01$), a difference of 1.98 on a 21-point scale (11.30 versus 9.32) between the two backgrounds indicates that the negative manipulation was not perceived as artificial compared to the more neutral design.

Finally, like previous work in the A_{ad} literature, this experiment likely tested attitude formation, not change. The use of a "new" product—albeit one very similar to those found in the market place—makes measurement of attitude change impractical as no baseline attitude information was available. This is a problem recurrent in a great deal of the attitude literature, so its presence here should not unduly influence the conclusions reached.

Observations

Results from this study do not provide support for the adaptability of the ELM to the Internet. As shown, involvement does not moderate the effect message arguments have in the formation of A_{ad}, A_b and intentions. This research calls into question the role involvement will have in determining the type of processing undertaken on Internet sites, and the resultant effects of message execution on attitudes and intentions.

Evidence for involvement moderating the effects of peripheral cues on A_b, as predicted by the ELM, is also lacking. Here, peripheral cues fail to affect attitudes with lower involvement subjects. This is an indication that information processing while viewing Internet advertisements may well be different than in other media. This is especially surprising given how poorly the negative peripheral cue was perceived.

Additionally, while Miniard et al. (1990) did find a significant effect for peripheral cues on A_b under higher involvement, such a direct effect was absent in this research. This is yet another indication that people may process Internet advertisements differently than other types of advertisements.

The results for brand thoughts are also worth noting as they indicate some differences in the way the ads were processed in this research from previous findings. Miniard et al. (1990) report that only involvement had a significant effect on C_b. Our results indicate that peripheral cues also had a significant effect on the number of brand thoughts ($F=15.79$, $p<.001$). That the peripheral cue would demonstrate a

consistent effect on C_b but not A_b indicates a possible difference in Internet site processing from that predicted by the ELM relative to the operation of peripheral cues. While it is possible that the limited number of brand thoughts (from .07 to 1.64 with an average of .89 thoughts per cell) restricts the generalizability of these findings, statistically there is a difference.

One possibility that must be examined is that the negative peripheral cue was so extreme that it reduced the subjects' ability to process the information on the Website. In this situation the peripheral cue would itself become more important, perhaps used as a heuristic to infer the quality of the message (Macinnis and Jaworski 1990; Petty, Cacioppo and Goldman 1981; Petty and Cacioppo 1984). However, given that the argument strength manipulation was successful across the backgrounds used, we find this explanation unlikely.

What these findings do support, however, is work (Korgaonkar and Wolin 1999) that finds the Internet to be particularly valued for the information it contains. In fact, in sites of this type, these effects may be so dominant that other Web site design elements should only be considered with regard to their impact on information presentation. This should not be overlooked in future studies of Internet promotions.

Future Research Directions

Besides the crucial need to more fully understand the impact of realism in experiments in general, and the effects of involvement on the Internet as a medium, research must begin on one key issue: Is it a single element of Internet advertising that makes it different (e.g., interactivity), is it the sum total of many small differences operating in unison that makes it different from other media, or are differences and similarities between the Internet and other media contextually, situationally, or individually determined? Testing between media, settings and people is challenging but needed to fully understand if and how this new medium is similar and different.

Conclusion

Involvement has played a major role in our analysis of persuasive communications since Krugman introduced it over 30 years ago. What we are now seeing, perhaps for the first time, is an inherently involving medium. Within the limitations of one test, it appears that the look and feel of an Internet site is, perhaps, *less* critical than the look and feel of promotions in other media. It is startling to note that subjects in this experiment largely ignored an excruciatingly difficult Website background or wallpaper in their formation of brand attitudes. It would appear that, on the Internet, an emphasis on providing quality information is critical to perceptions of the site and brand.

What remains to be seen is why the difficulty of adapting the ELM to the Internet arises. Two possible explanations are (1) the interactive nature of the Web, or (2) because people look to the Web more as more of an information source akin to direct marketing (Peltier, Mueller, and Rosen 1992), while mass media more often focus on image.

Our understanding of how Internet advertising works will hinge on discovering how various aspects of a Website are viewed. Critical issues to address include: What constitutes arguments or peripheral cues for a Website? Do these elements vary between types of sites, products, or even by the type of user? Is the complexity or level of animation (video, JavaScripts, or rich media) on a site considered solely peripheral cues? Do executional cues matter to an involved observer? Under what circumstances might executional features be viewed as arguments? As the results of this research are extended, it appears that maintaining a focus on information in designing Websites may well have a larger benefit and/or impact on attitudes than any executional tactics.

The ELM has, and will continue to add, great insight into our understanding of persuasion. However, as this research clearly shows, its blind adaptation to new and evolving media may indeed prove problematic. What remains to do next is uncover what it is about Internet advertising that is different, and how this will change the process of persuasion in this new medium. Given the lack of support for the ELM, we can see that there are reasons to think differently about this new medium.

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Endnotes

[1] It is acknowledged that Internet usage motivations are largely situation-specific. However, for any one "session," it is likely that the involvement is stable as the user is either on the Web with an objective, or simply "surfing."

[2] One outlier of 58 minutes was changed to the experimental mean (the subject received a phone call during the experiment), and the responses of one physically challenged student were recorded by one of the authors, increasing this subject's time.

[3] The third postulate of the ELM (Petty and Cacioppo 1986) states that variables may serve as either arguments, peripheral cues, or affect the extent or direction of issue and argument elaboration. To further demonstrate that the wallpaper manipulation served solely as a peripheral cue, ANOVA analysis was run (using both the manipulated involvement and SRI groupings) testing for a peripheral cue effect on: number of Web pages reviewed, time spent on the experiment, and the total number of thoughts. In no case did peripheral cues have a significant effect on these indicators of altered elaboration ($p>.32$). Hence, the peripheral cue worked only as intended.