WHY BUSINESS PEOPLE USE THE WORLD WIDE WEB

An Application Of Uses And Gratifications Theory

DIANE F. WITMER AND CHUTATIP TAWEESUK
Department of Communications
California State University, Fullerton
P.O. Box 6846
Fullerton, CA 92834-6846 USA

Abstract. This survey study examines psychological and functional uses of the World Wide Web among US and Mexican business communicators. It applies uses and gratifications theory, which addresses the attitudes and behaviors that have been identified with television viewing motives, to new communication technologies. A total of 71 business communicators and students were asked how and why they used the Web, their attitudes toward it, and how their use of other media had changed since they started using the Web. Results indicate that the Web performs some functions similar to traditional media, and that U.S. and Mexican business communicators use the Web for news, business, and education. Both Mexican and U.S. users apparently are motivated to access the Web to pass time or out of habit, for arousal, to escape, to relax, and for social interaction. Study results indicate that the Web is not supplanting use of other media, but that some Web users tend to rely less on printed forms of communication such as magazines and newspapers, and that they read less for pleasure. The concept of flow is proposed as potentially useful for future research.

As the adoption of computer technology continues to increase in commerce, business, education, public venues, and home spaces, both academic and commercial researchers are recognizing the importance of understanding the nature of computer-mediated communication (CMC) and the ways in which it is used. The World Wide Web, in particular, is attracting attention, and scholars are beginning to question how and why people use it. As the technology is adopted in developing countries, serious questions also arise about the nature of Web use across cultures. The purpose of this paper is to address both issues.

Internet technology has drawn keen interest from communication scholars for years (e.g., Eisenberg and Monge, 1983; McLaughlin, Osborne and Smith, 1995; Rice, 1989; Schmitz and Fulk, 1991), but relatively little work has

focused specifically on the more recently developed, specialized portion of the Internet known as the World Wide Web. Studies in CMC traditionally have explored the uses, effects, and social constructions of text-based messaging (e.g., Garton and Wellman, 1995; Lea, O'Shea, Fung, and Spears, 1992; McCormick and McCormick, 1992; O'Sullivan, 1995; Rafaeli, Sudweeks, Konstan, and Mabry, 1994; Schaefermeyer and Sewell, Jr., 1988; Schmitz and Fulk, 1991; Sproull and Kiesler, 1986; Sudweeks and Rafaeli, 1995; Thompsen and Foulger, 1993; Witmer, 1998; Witmer and Katzman, 1998; Yates and Orlikowski, 1993), real-time, text-based chatting and role-playing domains (e.g., Batterson, 1994; Bruckman, 1993; Reid, 1991; Rheingold, 1993), and groupware (e.g., Lea and Spears, 1991; Poole and DeSanctis, 1989). This survey study focuses on Web use, and asks what motivates people to use the Web, both in the United States and in Mexico. Because the Web is used extensively for business and commerce, it targets a population of business communicators.

Theoretical Background

The adoption of the Web for business and commerce has spurred some preliminary studies that specifically address the Web as a new communication medium. One line of research applies Csikszentmihalyi's concept of "flow" (Csikszentmihalyi, 1975, 1990; Csikszentmihalyi and Selega-Csikszentmihalyi, 1989) to Web use for commercial purposes. Flow is broadly defined as an "optimal experience" (Csikszentmihalyi, 1990; Csikszentmihalyi and LeFevre, 1989) that maximizes perceptions of control, cognitive enjoyment, and absorption in an interaction. A number of scholars consider flow a useful construct for exploring human interactions with computers (e.g., Csikszentmihalyi 1990; Ghani, Supnick and Rooney 1991; Trevino and Webster 1992; Webster, Trevino, and Ryan 1993). Hoffman and Novak (1995) assert that Web users become deeply engaged in Web sites when a state of flow is reached, and propose a many-to-many model of communication for the Web that overturns traditional principles of mass media advertising and marketing. They articulate a phenomenon that practitioners have observed since the inception of the Web: public relations, marketing, and advertising efforts cannot target Web users as passive mass audiences. Rather, practitioners must consider the Web as a many-to-many medium that is populated by individual users who interactively engage in the communication process.

A second line of research applies uses and gratifications theory, which addresses the attitudes and behaviors that have been identified with television viewing motives, to new communication technologies. Uses and gratifications theory is widely used in mass media studies (e.g., Tan, 1985), and has been advanced for several decades. As early as 1940s, researchers studied why people engage in various from of mass communication behavior such as

listening to radio, or reading newspapers and books. Herzog (1944) found three types of gratifications--emotional release, wishful thinking, and obtaining advice--to be associated with listening to radio soap operas. Lasswell (1948) proposed four functions of the mass communication media: surveillance, correlation, entertainment, and socialization. Similarly, McLeod and Becker (1974) found seven dimensions, which they called surveillance, excitement, reinforcement, guidance, anticipated communication, relaxation, and alienation. Davison (1959) pointed out that the communicator's audience is not a passive recipient. Rather, the audience demands something from the communications to which they are exposed, and chooses only those communications that offer some benefit.

A number of later studies investigate the uses and gratifications of traditional media such as television, radio, and print. McQuail, Blumler, and Brown (1972) assert that traditional mass media perform four functions: surveillance, diversion, personal identity and social integration. People gather information about environment through mass media, and escape from the constraints and stress of their daily lives. Individuals find emotional release, tools for reference, support for ideas, behavioral guidance, reality exploration, and value reinforcement through media use. They use the media as substitutes for companionship, and to gather information for use in social relationships .

Greenberg (1972) identifies motives for and gratifications of television viewing among young students in England. He believes that the motives for television viewing among pre- and post-adolescent children could form an adult pattern of gratifications, and defines seven motivational variables:

1. *To pass time*. Children watch television when they're bored, when they have nothing better to do, because it passes the time, or because it gives them something to do.
2. *To forget.* Children watch television to forget school and homework problems, and to get away from the rest of the family or current tasks.
3. *To learn.* Children watch television to learn things that happen in the real world, how to do new things, to get ideas, and to learn things they don't learn in school.
4. *Arousal.* Children watch television because it's thrilling, or it excites them.
5. *Relaxation.* Children watch television because it relaxes them, calms them down when they're in a temper, provides a pleasant rest, and because they are not required to do anything when watching.
6. *Companionship.* Children watch television because it approximates a human friend, they don't want to be alone, when there is no one to talk or play with, and because it makes them feel less lonely.
7. *Habit.* Children watch television because it's a habit or because they just like to watch.

Greenberg (1972) reports the major reasons that 15-year-olds children watch television are for learning, for arousal, and for companionship. For 12-year-olds, he identifies learning, arousal, to forget, and habit as the major motivators. For 9-year-olds, the factors of learning, to forget, and relaxation were found.

Other studies also have examined motivations for using mass media. Katz, Gurevitch, and Hass (1973) identify in the literature 35 human needs on the social and psychological functions of the mass media. They suggest that media-related needs of individuals can be classified into five categories:

1. Cognitive needs are relevant to the seeking of information, knowledge and understanding of environment. They are based on the individual's desire to understand and control the environment and satisfy the person's curiosity and exploratory drives.
2. Affective needs drive people to strengthen aesthetic, pleasurable emotional experiences. Mass media are widely used for the pursuit of pleasure and entertainment.
3. Personal integrative needs are influenced by a desire for self-esteem, and motivate individuals to seek confidence, credibility, and status.
4. Social integrative needs are based on an individual's desire for affiliation, motivate people to seek contact with friends and the world.
5. Escapist needs or tension release needs are relevant to the desire to escape, relieve tension or boredom, and seek diversion.

Rubin (1983) enumerates five television viewing motivations that are similar to those of Katz, Gurevitch, and Hass, and that provide a foundation for our study: 1) to pass time/habit, 2) for information, 3) for entertainment, 4) for companionship, and 5) for escape.

Researchers interested in studying the theory of uses and gratifications speculate that new media will expand audience motivations. Some scholars consider the Web a hybrid medium that crosses computers and television (e.g., (Berniker, 1995; Newhagen and Rafaeli, 1996), and a number of contemporary studies have tested the transferability of uses and gratifications theory from television to a variety of new communication technologies (e.g., Lin, 1993; Perse and Ferguson, 1992; Rubin and Bantz, 1989; Walker and Bellamy 1989; Walker, Bellamy and Truadt, 1992; Williams, Phillips, and Lum, 1985).

Jeffres and Atkin (1996) propose a new grid of communication that includes the three technologies of television, telephone and computer, which may invoke different patterns of uses or needs than those associated with traditional communication. Jeffres and Atkin indicate that emerging modes of communication will allow audiences to use a wider range of communication types than those originally envisioned. The role of audiences as passive message receivers in traditional media has been changed to a role of active message senders. Audiences are capable of communicating through the new media, a concept that Hoffman and Novak (1995) have applied to the Web in a many-to-many communication model.

The Internet and Web as new media for communication may satisfy basic individual needs in the same way that traditional forms of media do. However, communication through the Web has several characteristics that distinguish it from the traditional media. For example, it provides interactivity (Rafaeli, 1988), hypertexuality, multimedia, and synchronicity (Morris and Ogan, 1996). Thus, the unique characteristics of the Web may also evoke different motives for using it than for those that prompt traditional media use, as Jeffres and Atkin (1996) suggest. To explore this possibility, our survey study asks student and professional business communicators in the U.S. and Mexico why and how they use the Web, and examines both the functional and the psychological reasons for Web use.

Research Questions

FUNCTIONAL USES OF THE WEB

Fawcett (1996) asserts that people are logging onto the Internet for information, communication, and research, rather than for entertainment. Respondents to his questionnaire who had used the Web or Internet within six months of the survey reported that they accessed the Web and Internet primarily for gathering news and information (82.0%), to use e-mail (80.5%), to conduct research (61.1%), visit Web sites (66.9%), post to bulletin boards (39.3%), join real-time chat rooms (25.3%), play games (23.8%) and shop (14.9%). They also utilized the Web and Internet as alternatives to traditional library research for consumer product information, or to prepare work for school or business. Our study extends the question of Web use to an international audience of student and professional business communicators. Of particular interest is how business communicators in a developing country, specifically Mexico, use the Web in comparison to those in the United States. Our first two research questions, therefore are:

> **RQ1:** What are the major functional uses of the Web for business communicators?
> **RQ2:** Are the functional uses of the Web by business communicators in Mexico different than those of business communicators in the United States?

MOTIVATIONS FOR USING THE WEB

Gollin, (1994), in a review of the literature that spans from 1945 to 1987, reports that studies applying uses and gratifications theory yield reliable results through time and across all forms of media. Rubin's (1981, 1983) research on television provides both a useful framework and a method for investigating the application of uses and gratifications theory to the World Wide Web. Our study builds on his and Kaye's (in press) work and asks:

RQ3: What are the motivations for using the Web among business communicators?

RQ4: Are the motivations for using the Web by business communicators in Mexico different than those of business communicators in the United States?

ATTITUDES TOWARD THE WEB AND THE RELATIONSHIP BETWEEN WEB USE AND USE OTHER MEDIA

Rubin's (1981, 1983) work examines the relationships between television viewing motivations, amount of viewing, affinity toward television, and perceived reality of programming content. Kaye's (in press) research investigates similar associations between Web use motivations, amount of time spent on the Web, affinity, perceived reality of Web content, and ease of use. Our study extends these efforts, and asks:

RQ5: What are the relationships between business communicators' World Wide Web use motivations, and Web affinity, perceived reality and ease of use?

RQ6: Are the relationships between World Wide Web use motivations, and Web affinity, perceived reality and ease of use different for Mexican business communicators than for U.S. business communicators?

RQ7: What are the relationships between business communicators' World Wide Web use and their use of other media?

RQ8: Are the relationships between business communicators' World Wide Web use and use of other media different for Mexican business communicators than for U.S. business

Method

INSTRUMENTATION

To answer the research questions, we used a modified version of Kaye's (in press) questionnaire, which drew on Rubin's 30 reasons for watching television, and asked respondents about their motivations for using and attitudes toward the Web, as well as their use of both the Web and of other media. We added the following definitions of the World Wide Web and what constituted Web use at the beginning of the questionnaire to prevent potential misunderstandings by novice users:

> For purposes of this questionnaire, the World Wide Web is defined as any hypertext documents or activities you enter through a World Wide Web browser (Examples: Microsoft Explorer or Netscape Navigator), including such things as on-line publications, Web-based e-mail, chat rooms, video and audio streams, and Web-based games. As you answer the following questions, you **should keep in mind everything you access through any Web browsers**, including those offered through commercial service providers (Examples: CompuServe

Information Systems or America Online). You **should not include non-Web-based activities** (Examples: "chats" through such systems as Unix "talk," Internet Relay Chat, or CompuServe forums; e-mail messages sent or received through such applications as Elm, Eudora, Microsoft Exchange, Pine, or POPMail; interactive role-playing activities such as MUDs, MOOs, or MUSHes).

Functional uses of the Web

We asked two nominal questions to determine respondents' functional uses of the Web. Respondents ranked their three favorite types of sites in a categorical listing, as well as which types of sites they accessed most often. Open-ended questions also asked respondents about their functional uses of the Web.

Motivations for using the Web

To identify respondents' motivations for using the World Wide Web, we utilized Kaye's (in press) index,[1] which drew on Rubin's (1981, 1983) 30 reasons for watching television, but reworded Rubin's response items to refer to the World Wide Web rather than TV. Our questionnaire used five response options, which allowed respondents to indicate their level of agreement with each item by checking boxes that corresponded with the following: 1) Strongly Agree (SA); 2) Agree (A); 3) Neutral (N); 4) Disagree (DA); 5) Strongly Disagree (SD). In addition, our questionnaire, like Kaye's, included an open-ended item that asked respondents to state their main reasons for accessing the Web.

Attitudes toward the Web

Kaye's (in press) instrument adapted Rubin's (1983) two summated indexes to measure the relative importance of the Web in users' lives (affinity), and perceived realism of Web content. Kaye's instrument also included a third summated index that probed respondents' perceived ease of using the Web. We utilized all three indexes in our questionnaire.

Use of the Web and other media

Our instrument used Kaye's (in press) response items to ask respondents the average number of hours they used the Web and their levels of experience, in terms of both the number of times they had accessed the Web and the number of hours per week they typically spent on it. Respondents also were asked to indicate the extent to which their use of various communication technologies had changed since they started using the Web, how they navigated the Web, and the types of communication technologies they currently owned.

---

[1] We follow DeVellis's (1991) distinction between a scale and an index, where a scale measures an" underlying construct," and an index measures "'cause indicators,' or items that determine the level of a construct (p. 9).

SAMPLE

Because our research questions concerned perceptions of business communicators in the United States and Mexico, our sample population was limited to individuals readily identifiable as being involved in some aspect of business communication or public relations. We thus focused on participants in professional workshops or meetings of professional associations. The questionnaires were distributed to three groups of people in four separate venues: 1) a meeting of the Public Relations Student Society of America (PRSSA) at a western university; 2) a meeting of the Public Relations Society of America in the western United States; 3) a workshop in Mexico City, D.F., Mexico on public relations technology that was conducted in English, and that focused on using the Internet and Web; and 4) a workshop in Celaya, Guanajuato, Mexico on public relations technology that was conducted in English, and that focused on using the Internet and Web. In all data collection, we asked that only adults over the age of 18 years old participate, ensured that all responses were anonymous, and offered a report of our findings.

DATA ANALYSIS

Functional uses of the Web
We used descriptive statistics to examine the demographic composition of the sample group and functional uses of the Web. We also used chi-square tests to determine if observed differences between groups for functional uses were significant.

Motivations for using the Web
 A confirmatory principal components factor analysis with varimax rotation was used on the 30 response items that addressed motivations for using the Web. The purpose of the factor analysis was to determine the extent to which our instrument yielded similar factors to those that Kaye (in press) identified. We also used alpha coefficients to verify internal reliability for each of the identified factors. We then utilized the regression approach to estimate factor scores, which yields the highest correlations between factors and factor scores (Tabachnick and Fidell, 1989). The reduced data were used as dependent variables in a Multivariate Analysis of Variance (MANOVA) to test, using Wilks' lambda criterion, for differences between U.S. and Mexican business communicators in motivations for using the Web.

Attitudes toward the Web
The indices for affinity, reality, and ease of use were measured for reliability, using alpha coefficients, and after adjusting for the reverse polarity of five of the response items. We then used MANOVAs with Wilks' lambda criterion to test for differences between U.S. and Mexican business communicators.

Use of the Web and other media

Correlation analyses were used to examine the relationships between the five identified motivations for using the Web and the recency or frequency of their Web use, and between users' affinity for the Web and the recency or frequency of their Web use. We also used a correlation analysis to determine if there were any significant relationships between respondents' perceived ease of use and the recency or frequency of their Web access, and a chi-square statistic to test for differences between the Mexican and U.S. groups.

Results

A total of 71 people participated in the study: 21 Mexican nationals, 30 U.S. public relations professionals (PRSA), and 20 U.S. student practitioners (PRSSA). All participants were at least 18 years old. Of the 65 individuals who indicated age, most (78.8%) were between the ages of 18 and 34, with the average age under 30. This is a younger age range than recent Web-based studies report (see, for example, Georgia Tech Research Corporation, 1997), but was not a surprise, since 75.0% of the student group in our sample was between the ages of 18 and 24.[2]

Of the 65 respondents who indicated gender, 27 (41.5%) were male and 38 (58.5%) were female. Although the ratio of females to males using the Web appears to be increasing (Georgia Tech Research Corporation, 1997), our respondents clearly represented a higher ratio of females to males than the 38.5% reported in GVU's 8th Web Users Survey (Georgia Tech Research Corporation, 1997). This was not unexpected, since both the PRSA and PRSSA groups were predominantly female.

Of the 65 respondents who indicated their level of education and income, 27.3% had completed some college, 48.5% had completed a baccalaureate degree, and 18.2% had completed a master's degree. Most (71.7%) earned less than $50,000 per year. This figure may be suppressed as a result of the relatively low incomes of the student group, 77.7% of whom reported earning less than $20,000 per year.

FUNCTIONAL USES OF THE WEB

The most popular type of Web site among survey participants was news delivery. Of the 64 respondents who indicated their three favorite types of Web sites, 20.3% ranked "News" first, and 48.4% ranked it as one of their top three

---

[2] According to GVU's Eighth survey, the average user is 35.7 years old, which is slightly higher than the Seventh survey average of 35.2 years old, and continues the trend of increasing average age. The average age reported in the GVU Survey is within the margin of error reported by FIND/SVP's 1997 American Internet User Survey of 36.5 years old.

favorites. Business sites were ranked first by 25.0% of our respondents, and were among the top three favorites for 42.2% of the sample group. The third most popular type of site among our respondents was educational, which was among the top three favorites for 32.8%, but ranked first among only 4.7%. The open-ended question that probed which types of information respondents found most useful on the Web confirmed the ordinal data, and indicated that 37.0% of our respondents preferred news-related Web sites, and 17.7% accessed business information. The open-ended question that probed which Web sites participants accessed most frequently indicated that the most often visited sites pertained to news (56.5%), entertainment (25.0%), and sports (14.5%).

Although news delivery ranked first in popularity, 42.2% of the respondents indicated that they most frequently accessed the Web for business or professional reasons, and 61.0% ranked business as one of their three primary reasons for accessing the Web. Research (59.4%) and general exploration of Web content (42.2%), ranked second and third, respectively, as being one of the top three reasons for accessing the Web. Keeping up with current events was also cited by 37.5% of the respondents as being among the three primary reasons for using the Web. The open-ended question that probed reasons for accessing the Web indicated that approximately 56.5% of our respondents used the Web primarily for research and for e-mail (26.0%).

We used a chi-square statistic to determine if there were significant differences between the student group, the U.S. business communicators, and the Mexican business communicators in their Web site preferences. First, we ran chi-square statistics to determine if there were significant differences between the U.S. student and professional groups. The results indicated that there was no significant difference between the two groups for any of the three favorite types of Web sites: news (Chi-Square [2, N = 25] = .135, p =.93), business, (Chi-Square [2, N = 20] = 2.17, p =.33), or educational (Chi-Square [2, N = 13] = 1.99, p =.37). Tables 1, 2, and 3 represent the statistical tests for each of the variables.

Table 1. Chi-square for news sites as among top three favorites of students (PRSSA) and professionals (PRSA)

	PRSSA	PRSA	TOTAL	Percent
News sites ranked #1	4	7	11	44.0
News sites ranked #2	4	5	9	36.0
News sites ranked #3	2	3	5	20.0
TOTAL	10	15	25	100.0
Percent	40.0	60.0	100.0	

Chi-Square Value = .13456, df = 2, p = .93493

Table 2. Chi-square for business sites as among top three favorites of students (PRSSA) and professionals (PRSA)

	PRSSA	PRSA	TOTAL	Percent
Business sites ranked #1	1	10	11	55.0
Business sites ranked #2	2	5	7	35.0
Business sites ranked #3	1	1	2	10.0
TOTAL	4	16	20	100.0
Percent	20.0	80.0	100.0	

Chi-Square Value = 2.16574, df = 2, p = .33862

Table 3. Chi-square for educational sites as among top three favorites of students (PRSSA) and professionals (PRSA)

	PRSSA	PRSA	TOTAL	Percent
Educational sites ranked #1	2	1	3	23.1
Educational sites ranked #2	4	2	6	46.2
Educational sites ranked #3	1	3	4	30.8
TOTAL	7	6	13	100.0
Percent	53.8	46.2	100.0	

Chi-Square Value = 1.98889, df = 2, p = .36993

We then combined the data for the student and professional U.S. groups, and ran chi-square statistics to determine if the Mexican group favored different Web sites than the combined U.S. groups.

Descriptive statistics indicated that both Mexican and U.S. business communicators favored news, business, and educational Web sites, but the rankings were reversed in the two groups. In the United States group, 50.0% ranked news sites in the top three, 40.0% favored business sites, and 26.0% preferred educational sites. In contrast, the 42.9% of the Mexican group preferred educational Web sites, 38.1% favored business sites, and 33.3% listed news sites in the top three. To determine if these differences were statistically significant, we ran chi-square tests. The statistical analysis indicated the differences between groups were not significant for the rankings of the three types of Web sites: news (Chi-Square [2, N = 32] = .59, p =.75), business, (Chi-Square [2, N = 28] = 1.41, p =.49), or educational (Chi-Square [2, N = 22] = 3.94, p =.14). Tables 4, 5, and 6 represent the statistical tests for each of the variables.

Table 4. Chi-square for news sites as among top three favorites of Mexican and US business communicators

	Mexican	U.S.	TOTAL	Percent
News sites ranked #1	2	11	13	40.6
News sites ranked #2	3	9	12	37.5
News sites ranked #3	2	5	7	21.9
TOTAL	7	25	32	100.0
Percent	21.9	78.1	100.0	

Chi-Square Value = .58635, df = 2, p = .74589

Table 5. Chi-square for business sites as among top three favorites of Mexican and U.S. business communicators

	Mexican	U.S.	TOTAL	Percent
Business sites ranked #1	5	11	16	57.1
Business sites ranked #2	3	7	10	35.7
Business sites ranked #3	0	2	2	7.1
TOTAL	8	20	28	100.0
Percent	28.6	71.4	100.0	

Chi-Square Value = 1.41105, df = 2, p = .49385

Table 6. Chi-square for educational sites as among top three favorites of Mexican and U.S. business communicators

	Mexican	U.S.	TOTAL	Percent
Educational sites ranked #1	0	3	3	13.6
Educational sites ranked #2	4	6	10	45.5
Educational sites ranked #3	5	4	9	40.9
TOTAL	9	13	22	100.0
Percent	40.9	59.1	100.0	

Chi-Square Value = 3.94160, df = 2, p = .13935

MOTIVATIONS FOR USING THE WEB

To determine the reliability of the survey instrument in identifying the factors described by Kaye (in press), we ran a confirmatory principal components factor analysis with varimax rotation on the 30 response items that addressed motivations for using the Web. An eight-factor solution with eigenvalues of at least one accounted for 74.2% of the variance. Six variables did not load on any factor and were discarded from further analysis. Another two variables loaded on two factors, and also were discarded. One factor had no variables that loaded at a minimum of .50, and another two factors had only one variable. The remaining five factors corresponded most closely with six of Greenberg's (1972) five motivations for television viewing among children than with Ruben's. Greenberg's motivations for media use were: (i) to pass the time, (ii) for arousal, (iii) to forget, (iv) for relaxation, (v) for social interaction, and (vi) out of habit. Most of the variables that addressed Greenberg's motivation of learning did not meet the criteria for factor loadings, and habit loaded with the factor of passing time, similar to Rubin's motivations. See Table 7 for the factor matrix of motivations for using the World Wide Web.

Internal reliability for each of the indices that resulted from the factor analysis was acceptable: to pass the time, alpha = .89; for arousal, .78; to forget, .81; for relaxation, .72; and for social interaction, .73. Thus, we accepted the factor for social interaction, because although it included only two variables, those variables were highly correlated with each other and did not correlate with other variables (Tabachnick and Fidell, 1989).

Factor scores for each of the five factors were estimated using the regression approach. We then performed a Multivariate Analysis of Variance (MANOVA), using Wilks' lambda criterion, with the U.S. PRSA and PRSSA groups being the independent variables, and the five motivation factors being the dependent variables. Since there were no significant differences between the two groups at the 95% confidence level (F[5,34] = .30, p = .907, η^2 = .04), we combined them for a comparison of U.S. and Mexican groups. A MANOVA on the five motivation factors as dependent variables with the U.S. and Mexican groups as independent variables indicated no significant differences at the 95% confidence level between the two groups in their motivations for using the Web (F[5,51] = 1.68, p = .16, η^2 = .14), although the univariate statistics indicated that one factor, arousal, approached significance(F[1,55] = 3.37, p = .072, η^2 = .06). The other nonsignificant factors were: to pass the time (F[1,55] = .06, p = .805, η^2 = .00); to forget (F[1,55] = 2.72, p = .105, η^2 = .05); for relaxation (F[1,55] = 1.15, p = .288, η^2 = .02); and for social interaction (F[1,55] = .83, p = .367, η^2 = .01). (See Table 8.)

Table 7. Factor matrix of motivations for using the World Wide Web

Web Use Motivations	Factor 1 Pass Time/ Habit α=.89	Factor 2 Arousal α=.78	Factor 3 Escape (to Forget) α=.81	Factor 4 Relaxation α=.72	Factor 5 Social α=.73
Factor 1: Pass Time/Habit					
Occupy time	.54184				
It's exciting	.55356				
It's a habit	.79440				
It's a pleasant rest	.76535				
When I'm bored	.76645				
It relaxes me	.69711				
It peps me up	.49846*				
Factor 2: Arousal					
It entertains me		.65851			
It's thrilling		.73186			
Learn how to do things		.82314			
Enjoyment		.72245			
Factor 3:Escape					
Forget school or work			.87512		
Get away from what I'm doing			.50400		
Get away from family, etc.			.70284		
Makes me feel less lonely			.50883		
Factor 4: Relaxation					
Allows me to unwind				.76983	
Family and friends also like Web				.75296	
It amuses me				.51481	
Factor 5: Social					
No one else to talk to					.70778
Talk to others about a site accessed					.74951
Variables that did not meet factor loading criteria					
Did not load on any factor: Like to access certain sites Like to access the Web Learn what could happen Access a specific site Find specific information Nothing better to do Double loaded: I don't have to be alone It helps me learn about myself and others					

*Rounded to .50

Table 8. Univariate F Tests for Web use motivations by nationality

Indep. Var.	Dep. Variable	F	df	Sig. of F
Nationality (MX and US)	Pass time/Habit	0.06133	1,55	.805
	Arousal	3.37434	1,55	.072
	Escape	2.71663	1,55	.105
	Relaxation	1.15232	1,55	.288
	Socializing	0.82892	1,55	.367

ATTITUDES TOWARD THE WEB.

We tested for reliability of each scale designed to measure affinity toward the Web, perceived reality of the Web, and perceived ease of use. The index for affinity and ease of use were acceptable, with alpha coefficients of .79 and .70, respectively. The index for perceived reality yielded an alpha of .20. Discarding any single item produced no alpha coefficient higher than .29, so the index was discarded from further analysis.

Affinity.
Most of the 68 participants who responded to the questionnaire items that addressed affinity indicated that they could do without the Web (61.8%), would not miss it if they didn't use it (60.6%), and did not prefer using the Web over doing other things (60.3%). Less than one-third (32.4%) indicated that using the Web was one of the most important things they did each day.

To test for differences in the relative importance of the Web between groups, we ran a MANOVA on the affinity index, which indicated no significant difference between U.S. students and professionals ($F[4,42] = 1.09$, $p = .373$, $\eta^2 = .09$). We therefore combined the two groups for a comparison of Mexican and U.S. Web users, and ran a MANOVA on the affinity index, which indicated a significant difference between the two groups ($F[4,62] = 3.79$, $p = .008$, $\eta^2 = .20$). The univariate tests indicated significant differences at the 95% confidence level on two of the four items: the one that stated, "Using the Web is one of the most important things I do each day" ($F[1,65] = 7.71$, $p = .007$, $\eta^2 = .11$), and the statement that "I would rather use the Web than do anything else" ($F[1,65] = 7.97$, $p = .006$, $\eta^2 = .11$) (see Table 9). More people in the Mexican group (55.5%) perceived the Web as important or very important than did people in the U.S. group (25.0%), and more of the Mexican participants preferred using the Web do doing other things (25.0% compared to 14.6%)

Table 9. Univariate F Tests for Web use affinity by nationality

Indep. Var.	Dep. Variable	F	df	Sig. of F
Nationality (MX and US)	Could do without	0.01024	1,65	.920
	Would not miss Web	0.01990	1,65	.888
	Using Web is important	7.70786	1,65	.007
	Prefer using the Web to anything	7.97143	1,65	.006

Ease of use.
Respondents were divided on their perceptions of the ease in updating news via the Web versus television, with 45% indicating disagreement and 35.2% agreeing with the statement that the Web was easier than TV. However, the bulk of participants considered the Web easy to use. The majority, 84.5%, responded that they usually could find specific information on the Web. The data also indicated that 74.7% of the respondents believed they could find information more quickly on the Web than in the library, 66.2% considered it easy to find information on the Web, and 63.4% considered finding information on the Web easier than by non-electronic sources.

We used MANOVA to test for differences between the U.S. student and professional groups for perceived ease of use. Since there were no significant differences at the 95% confidence level between the two groups (F[5,37] = 1.38, $p = 253$, $\eta^2 = .16$), we combined them for a comparison between the Mexican and U.S. groups. Results indicated no significant differences between the U.S. and Mexican business communicators in their perceptions of ease of Web use (F[5,54] = 1.15, $p = .346$, $\eta^2 = .10$).

USE OF THE WEB AND OTHER MEDIA

Respondents in this sample used the Web fairly regularly, although most (51.5% reported using the Web five hours per week or less. The majority (68.6%) reported that they had accessed the Web more than 50 times, and 48.6% indicated they had used the Web more than 100 times. A chi-square test indicated no significant difference in Web experience for Mexican users when compared to U.S. users (Chi-Square [5, N = 70] = 4.51, p =.48). Nearly all (94.2%) of the survey participants had accessed the Web within a week of completing the questionnaire, and most (70.0%) had used the Web within 24 hours. Most (70.4%) reported owning at least one computer with a CD ROM, and 28.1% indicated they owned at least one computer without a CD ROM. The majority of our participants owned at least one cellular phone (61.9%) or car phone (15.5%).

A correlation analysis indicated mild relationships at the .05 level of probability between affinity toward the Web and both the frequency and duration of respondents' Web use (see Table 10). A comparison of the correlation matrices for the Mexican and the U.S. groups indicated that all five dimensions of affinity correlated mildly with duration of Web use for U.S. participants, but did not correlate at all for Mexican participants. Similarly, all five dimensions of affinity correlated with frequency of Web use for the U.S. group, but only on two dimensions for the Mexican group (see Table 11).

Table 10. Correlation matrix of affinity toward the Web and frequency, duration, and recency of Web use for all participants

Attitude toward the Web	Recency	Duration	Frequency
Could do without	0.1665	**0.3193****	**0.2988****
Would not miss	0.1610	0.2275	**0.4580*****
Important to do	0.2312	**0.4711*****	**0.3153****
Rather use than anything else	0.1935	**0.3987*****	**0.2962***

* p < .05, ** p .01, *** p .001

Table 11. Correlation matrices of affinity toward the Web and frequency, duration, and recency of Web use for U.S. and Mexican participants

Attitude toward the Web	Recency (US)	Recency (MX)	Duration (US)	Duration (MX)	Frequency (US)	Frequency (MX)
Could do without	0.1560	0.1949	**0.5328*****	0.1176	**0.3590***	0.1655
Would not miss	0.0437	**0.4505***	**0.3970****	0.0445	**0.4549*****	**0.4691***
Important to do	**0.4003****	-0.0975	**0.5047*****	0.4254	**0.4292****	0.2529
Rather use than anything else	0.2405	0.1691	**0.3812****	0.3526	**0.3023***	**0.5076****

* p .05,   ** p < .01, *** p .001

A correlation analysis indicated a weak relationship at the .05 level of probability between one motivation factor (relaxation) and the average number of hours participants spent on the Web in a week (α = .28, p = .04). None of the other motivation factors (to pass time, arousal, to socialize, and for escape) correlated with frequency, duration, or recency of Web use (see Table 12). Additional correlation analyses for Mexican participants and U.S. participants revealed a slight relationship between the relaxation factor and the average

weekly Web use among Americans (α = .34, p = .04), but not among Mexican participants (see Table 13).

Table 12. Correlation matrix of motivational factors and frequency, duration, and recency of Web use for all participants.

Factor	Recency	Duration	Frequency
Pass time/Habit	0.1349	0.0679	-0.1059
Arousal	-0.1164	0.2105	0.2228
Escape	-0.0501	-0.1477	-0.0244
Relaxation	0.1137	**0.2752***	0.0717
Socializing	0.1572	-0.2110	0.1311

* p < .05

Table 13. Correlation matrices of motivational factors and frequency, duration, and recency of Web use for U.S. and Mexican participants

Factor	Recency (US)	Recency (MX)	Duration (US)	Duration (MX)	Frequency (US)	Frequency (MX)
Pass time/habit	0.0669	0.3508	0.0805	0.0635	-0.0481	-0.2871
Arousal	-0.2648	0.1204	0.1999	0.0866	0.2355	0.3205
Escape	-0.1800	0.2877	0.0273	-0.2766	-0.0830	-0.0013
Relaxation	-0.0050	0.3968	**0.3378***	0.1242	0.0617	0.1899
Socializing	0.2052	0.0514	-0.0125	-0.4235	0.2303	-0.1544

* p < .05

Perceived ease of finding information on the Web correlated mildly with the average number of hours users spent on the Web (α = .34, p = .01), but no other dimension for ease of use was related to frequency, duration, or recency of Web use (see Table 14). Additional correlation analyses indicated that a mild relationship (α = .47, p = .05) existed only between perceived quickness of searching for information on the Web and frequency of Web use for the Mexican participants (see Table 15).

Of the participants who responded to the items that asked about the extent to which their Web use affected their use of other media, 72.7% indicated their television viewing had not changed, and 21.2% indicated it had decreased or greatly decreased. A total of 83.1% respondents indicated their viewing of videotapes had not changed, and most had not changed their radio (72.3%) or stereo listening (75.8%). However, 47.8% of the respondents indicated their library use had decreased or greatly decreased. While the reading habits of most

survey participants remained unchanged (58.2% for magazines, 56.1% for newspapers, and 72.7% for books), some decrease in reading was evident in these data. Magazine reading has decreased or greatly decreased for 23.9% of the respondents; 24.2% report a decrease or great decrease in their newspaper reading; and 19.7% read fewer books for leisure. Movie going has remained unchanged for most (80.3%) respondents (see Table 16).

Table 14. Correlation matrix of perceived ease of use and frequency, duration, and recency of Web use for all participants

Dimension	Recency	Duration	Frequency
Web easier than TV to update news	0.1087	0.2107	0.2410
Relative ease of finding specific info on Web	0.0035	0.1225	0.0204
Easy to find information on Web	0.0118	**0.3366****	0.0686
Quick to search on Web	0.0405	0.1630	0.1183
Web easier than non-electronic sources	-0.0102	0.1425	0.0993

* p < .01

Table 15. Correlation matrices of perceived ease of use and frequency, duration, and recency of Web use for U.S. and Mexican participants

Dimension	Recency (US)	Recency (MX)	Duration (US)	Duration (MX)	Frequency (US)	Frequency (MX)
Web easier than TV to update news	0.0474	0.2727	0.2626	0.1495	0.2521	0.2662
Relative ease of finding specific info on Web	-0.0553	0.1695	0.0020	0.1979	-0.0248	0.1714
Easy to find information on Web	-0.0326	0.1375	0.2049	0.4668	0.0489	0.2427
Quick to search on Web	0.0571	0.0000	0.0571	0.3176	0.0047	**0.4694***
Web easier than non-electronic sources	0.1079	-0.2855	0.1031	0.2138	0.0694	0.2103

* p = .05

Table 16. Relationship of World Wide Web use and use of other media for all survey participants.

Medium Used	Greatly Increased (%)	Increased (%)	Unchanged (%)	Decreased (%)	Greatly Decreased (%)
Television	1.5	4.5	72.7	19.7	1.5
VCR	1.5	3.1	83.1	7.7	4.6
Magazines	6.0	11.9	58.2	22.4	1.5
Newspapers	7.6	12.1	56.1	22.7	1.5
Books (for Leisure)	1.5	18.2	72.7	18.2	1.5
Movies	1.5	12.1	80.3	4.5	1.5
Radio	1.5	16.9	72.3	7.7	1.5
Stereo	1.5	13.6	75.8	9.1	0.0
Library	1.5	14.9	35.8	44.8	3.0

More U.S. respondents (15.0%) reported a decrease in television viewing than did Mexican respondents (11.1%). A chi-square test indicated no significant differences between the Mexican and U.S. business communicators in their use of most media, but did reveal a significant difference between the two groups in the relationship between Web use and television watching (Chi-Square [4, N = 66] = 11.97, p =.02) (see Table 17).

Table 17. Chi-square for relationship between Web use and television watching between Mexican and U.S. groups

	Mexican	U.S.	TOTAL	Percent
Greatly decreased	1	0	1	1.5
Decreased	5	8	13	19.7
No change	11	37	48	72.7
Increased	3	0	3	4.5
Greatly increased	0	1	1	1.5
TOTAL	20	46	66	100.0
Percent	30.3	69.7	100.0	

Chi-Square Value = 11.97321, df = 4, Significance = .01755

Discussion

FUNCTIONAL USES OF THE WEB

Our first two research questions sought to identify the major functional uses of the Web for business communicators and the ways in which those uses might be

different for Mexican Web users than for users in the United States. Our study indicates that Mexican and the U.S. groups are nearly identical in their uses of the Web, although the rank order of their top three Web uses are reversed in our findings. The participants from both groups in this study use the Web primarily as a tool for news gathering and information seeking. The data indicate that news, business, and educational sites are the most often accessed, and that business communicators in this sample typically use the Web for business and professional purposes. These results confirm those of the study by Fawcett (1996), who found that 82.0% of respondents used the Web to collect news and information.

The overwhelming interest in research and keeping up with current events across groups supports the idea that business communication and public relations requires a knowledge of world and business news and research in a broad range of subjects (e.g., Strenski, 1996). Thus, the Web may serve as an information resource where users can find specific information they want from home, work, or school, then download, print, or save to disk for easy retrieval.

MOTIVATIONS FOR USING THE WEB

Our third and fourth research questions focused on identifying business communicators' motivations for using the Web, and determining if those motivations were different for Mexican professionals than for U.S. professionals. Although we utilized a nearly identical survey instrument to Kaye's (1996), we were unable to replicate her results. Our data yielded five motivation factors that more closely with Greenberg's (1972) seven motivations for television viewing among children than with Rubin's (1983) factors, although the questionnaire items were drawn from Rubin's work. This finding is not surprising, given the similarity of the factors identified by both researchers.

ATTITUDES TOWARD THE WEB.

The fourth and fifth research question asked about the relationships between business communicators' World Wide Web use motivations, and Web affinity, perceived reality and ease of use, and whether those relationships were different for Mexican Web users than for U.S. users. Since our index for perceived reality was not appropriate for analysis, we are unable to fully answer these questions, and could address only affinity and perceived reality.

Affinity
Our data indicate that the Web does not play a particularly important role in the lives of business communicators, even though they routinely use it. This is not unexpected, since more than a quarter of our respondents indicate that a major functional use of the Web is e-mail. Had our survey instrument included

functions that users accessed without their Web browsers, this figure undoubtedly would be considerably higher.

Differences between the Mexican and U.S. groups in affinity indicate that the Mexican users consider the Web both more important and a more interesting way to spend their time than do the U.S. users. This may be due, in part, to the newness of Web technology in a developing nation, although our Mexican participants have similar levels of Web experience to those of the U.S. participants.

Ease of use

Our data indicate that both Mexican and U.S. business communicators consider the Web easy to use. This finding is to be expected, given the educational and experiential levels of our respondents, who typically are college graduates, and have accessed the Web between 50 and 75 times. There is some evidence that both Mexican and U.S. users spend more time on the Web when they perceive information easy to access on-line. However, only Mexican users who have accessed the Web repeatedly consider the Web a quick resource for seeking specific information.

USE OF THE WEB AND USE OF OTHER MEDIA

Our seventh and eighth research questions examined the relationships between business communicators' World Wide Web use and their use of other media, and asked if World Wide Web use and use of other media were different for Mexican business communicators than for U.S. business communicators. Our data indicate that U.S. business communicators who access the sites for relation purpose may spend more time on the Web, but that Web use is not correlated with any of the other motivation factors identified in this study. Not surprisingly, the participants in our sample access the Web more times and for more hours per week when they have a higher affinity toward the Web. Thus, the more experienced users tend to perceive the Web as more important to their lives.

Our study results indicate that the Web is not supplanting use of other media; both Mexican and U.S. users have not changed the extent to which they watch television, movies or videotapes, or listen to the radio or stereo. This may be, in part, to the fact that one can listen to a stereo or have the television on while sitting at the computer. Radio listening, in particular, often occurs during automobile commutes, times when one is unlikely to be using a computer to connect to the Web. The data do indicate, however, that some Web users tend to rely less on printed forms of communication such as magazines and newspapers, and that they read less for pleasure.

LIMITATIONS OF THE STUDY

This study has some limitations that affect generalizability to a larger population The first involves the sampling procedure. Since our research questions concerned perceptions of business communicators in the United States and Mexico, we limited our sample population to individuals readily identifiable as being involved in some aspect of business communication or public relations. We thus focused on student and professional public relations associations and on workshop participants in Mexico who were interested in Internet and Web technology. Thus, our nonprobabilistic sample focused on public relations groups in the western United States, and on business communicators with stated interests in Web and Internet technology. Participants in both groups were generally computer literate and well educated, and may not be representative of all business communicators. Second, the relatively small sample size may affect the statistical power of our findings. Third, we were unable to calculate response rates to our survey because administrative difficulties during data collection in Mexico prevented an accurate count of workshop participants. Finally, because the Mexican workshops were conducted in English, our survey instrument was written in English. Therefore, we may have received fewer responses and less accurate responses to questionnaire items than if we had used a Spanish language translation. Nonetheless, this study offers researchers a starting point for exploring functional and psychological reasons for Web use in a business environment.

Implications and Conclusions

Our research indicates that Mexican and U.S. business communicators are more similar than different in their use of the World Wide Web. Their professional needs clearly outweigh any cultural differences that may affect their Web use. Older media (including television) are not being supplanted by the Web, but these business users do tend to consider the Web a replacement for a trip to the library or a daily newspaper. As integrated communication technologies continue to emerge (e.g., Web TV), the interactivity of the Web will continue to be a central issue for business and professional communications. Television commercials and infomercials, for example, are likely to make heavy use of the interactive capabilities of Web technology to attract buyers who prefer interactive communication (Lee and Lee, 1995).

Web use motivations are similar to gratifications sought from TV viewing, but seem to be an uncomfortable fit for researchers in the new medium of computer-mediated communication. The Web, for example, offers users an interactive, multi-directional channel of communication (e.g., e-mail and listservs), as well as news, business and educational sites. A number of

variables that constitute the five factors we identified appear to address constructs more closely associated with flow (Csikszentmihalyi, 1975, 1990; Csikszentmihalyi and Selega-Csikszentmihalyi, 1989) than with traditional motivations for mass media consumption, including cognitive enjoyment, control, and absorption in the event (e.g., the items that address enjoyment, excitement, and learning). While experiencing a state of flow, for example, an individual's cognitive and sensory curiosities are aroused (Malone, 1981) through various, new, and surprising stimuli (Berlyne, 1960). Technological characteristics of the Web, including color, graphics, movement, and sound can stimulate sensory curiosity. A user also may be cognitively aroused by the desire to attain competence/expertise with the Web through the menu options and point-and-click technology that stimulate exploration (Malone and Lepper, 1987).

The concept of flow also is linked to interactivity, which is defined as responsiveness of the medium (Rafaeli, 1988). Interactivity is a characteristic of the Web that may enhance interpersonal communication (Heeter, 1989), flexibility (Kiesler, Zubrow, Moses, and Gellar, 1985), and human control over the pace, structure, and content of the communication (Rice, et al., 1984; Rogers, 1986). Trevino and Webster (1992) propose that, unlike traditional communication, CMC also requires users to interact with the technology itself. Thus, a user may choose to use a communication technology not only for the utilitarian purpose of sending or receiving a message, but because s/he enjoys interacting with technology. Such lived experience with technology is a phenomenon that seems more appropriately informed by a theoretical grounding in flow than in traditional uses and gratifications. Thus, future investigations should reconceptualize user motivations for Web use in terms of constructs that address the constructs of flow. Some researchers already are doing this (e.g., Csikszentmihalyi 1990; Ghani, Supnick and Rooney 1991; Hoffman and Novak, 1995; Trevino and Webster 1992; Webster, Trevino, and Ryan 1993), and it is clear that new ways of studying new technologies are an intellectual and practical imperative.

References

Batterson, D.: 1994, Young gay chat rooms on America Online, *Computer Underground Digest,* **6**(41), [On-Line] Available:
  http://www.eff.org/pub/Censorship/Online_services/aol_gay_censorship.articles

Berlyne, D.: 1960, *Conflict, arousal, and curiosity*, New York: McGraw Hill.

Berniker, M.: 1995, July 31, CBS the latest to use RealAudio, *Broadcasting and Cable*, 32.

Bruckman, Amy.: 1993, *Gender swapping on the Internet [On-Line]*, Available
  ftp://ftp.media.mit.edu/pub/asb/papers/gender-swapping.txt

Csikszentmihalyi, M.: 1975, *Beyond boredom and anxiety*, San Francisco: Jossey-Bass.

Csikszentmihalyi, M.: 1990, *Flow: The psychology of optimal experience*, New York: Harper and Row.

Csikszentmihalyi, M., and LeFevre, J.: 1989, Optimal experience in work and leisure, *Journal of Personality and Social Psychology, 56*, 815-822.

Csikszentmihalyi, M, and Selega-Csikszentmihalyi, I., (eds): 1989, *Optimal experience: Psychological studies of flow in consciousness*, New York: Cambridge University Press.

Davison, P.: 1959, On the effects of communication, *Public Opinion Quarterly, 23*, 343-360.

DeVellis, R.: 1991, *Scale development: Theory and applications,* Applied Social Research Methods Series, Volume 26, Newbury Park, CA: Sage.

Eisenberg, E, M., Monge, P. R., and Miller, K. I.: 1983, Involvement in communication networks as a predictor of organizational commitment, *Human Communication Research, 10*, 179-201.

Fawcett, A.: 1996, Online users go for facts over for fun, *Advertising Age, 67*(42), 46, 51.

Garton, L., and Wellman, B.: 1995, Social impacts of electronic mail in organizations: A review of the research literature, *in* B. R. Burleson (ed.), *Communication Yearbook, 18* (pp. 434-453), Thousand Oaks, CA: Sage.

Georgia Tech Research Corporation 1997, Graphic, Visualization, and Usability Center's (GVU) 8th WWW User Survey, [On-Line], Available:
http://www.gvu.gatech.edu/user_surveys/survey-1997-10/

Ghani, J. A., Supnick, R., and Rooney, P.: 1991, December, The experience of flow in computer-mediated and in face-to-face groups, *in* J. I. DeGross, I. Benbasat, G. DeSanctis, and C. M. Beath, (eds.), *Proceedings of the Twelfth International Conference on Information Systems*, New York.

Gollin, A.: 1994, *Newspaper trends, uses and gratifications: A research odyssey*, Paper presented at the annual conference of the American Association for Public Opinion Research, Danvers, MA.

Greenberg, B.: 1972, *Children's reasons for watching TV*, Audience research report, VR/72/147 London: British Broadcasting Corporation.

Heeter, C.: 1989, Implications of new interactive technologies for conceptualizing communication, *in* J. L. Salvaggio and J. Bryant (eds.), *Media use in the information age* (pp.217-235), Hillsdale, NJ: Erlbaum.

Herzog, H.: 1944, What do we really know about daytime serial listener? In P. Lazarsfield and F. Stanton eds.) *Radio research, 1942-43*, New York: Duell, Sloan and Pearce.

Hoffman, D. L., and Novak, T. P.: 1995, Marketing in Computer-Mediated Environments: Conceptual Foundations [On-Line], Available:
http://www2000.ogsm.vanderbilt.edu/cmepaper.revision.july11.1995/cmepaper.html

Jeffres, L., and Atkin, D.: 1996, Predicting use of technologies for communication and consumer needs, *Journal of Broadcasting and Electronic Media, 40*, 318-330.

Katz, E., Gurevitch, M., and Hass 1973 On the use of mass media for important things, *American Sociological Review, 38,* 164-181.

Kaye, B. K. in press. Uses and gratifications of the World Wide Web: From couch potato to Web potato, *The New Jersey Journal of Communication*.

Kiesler, S., Zubrow, D., Moses, A. M., and Geller, V.: 1985, Affect in computer-mediated communication, *Human Computer Interaction, 1*, 77-104.

Lasswell, H.: 1948, The structure and function of communication in society, In L. Bryson (ed.) , *The communication of ideas* (pp. 37-51). New York: Harper.

Lea, M., O'Shea, T., Fung, P., and Spears, R.: 1992, 'Flaming' in computer-mediated communication: observations, explanations, implications, *in* M. Lea, (ed.), *Contexts of computer-mediated communication* (pp. 89-112), New York: Harvester Wheatsheaf.

Lea, M. and Spears, R.: 1991, Computer-mediated communication, de-individuation and group decision-making, Special Issue: Computer supported cooperative work and groupware, *International Journal of Man-Machine Studies, 34*, 283-301.

Lee, B. and Lee, R.: 1995, How and why people watch TV: Implications for the future of interactive television, *Journal of Advertising Research, 36*(6), .9-17.

Lin, C. A.: 1993, Adolescent viewing and gratifications in a new media environment, *Mass Comm Review, 20*, 39-50.

Malone, T.: 1981, Toward a theory of intrinsically motivated instruction, *Cognitive Science, 4*, 333-369.

Malone, T., and Lepper, M.: 1987, Making learning fun: A taxonomy of intrinsic motivations for learning, *in* R. E. Snow and M. Farr (eds.), *Attitude, learning, and instruction, Vol. 3: Conative and affective process analyses* (pp. 223-251), Hillsdale NJ: Erlbaum.

McLeod, M., and Becker, B.: 1974, Testing the validity of gratification measures through political effects analysis, *in* J. G. Blumler and E. Katz (eds.), *The use of mass communication: Current perspectives on gratification research*, Beverly Hills, CA: Sage.

McCormick, N. B. and McCormick, J. W.: 1992, Computer friends and foes: Content of undergraduates' electronic mail, *Computers in Human Behavior, 8*, 379-405.

McQuail, D., Blumler J., and Brown, J.: 1972, The television audience: A revised perspective, *in* D. McQuail (ed.), *Sociology of Mass Communication*, (pp. 135-165) Harmondsworth, UK: Penguin.

Miller, S.: 1973, Ends, means, and galumphing: Some leitmotifs of play, *American Anthropologist, 75*, 87-98.

Morris, M. and Ogan, C.: 1996, The Internet as a mass medium, *Journal of Communication, 46*, 39-49.

Newhagen, J. E. and Rafaeli, S.: 1996, Why communication researchers should study the Internet: A dialogue, *Journal of Communication, 46*, 4-13.

O'Sullivan, P. B.: 1995, Computer networks and political participation: Santa Monica's teledemocracy project, *Journal of Applied Communication Research, 23*, 93-107.

Perse, E. M. and Ferguson, D. A.: 1992, *Gratifications of newer television technologies*, Paper presented at the annual convention of the Speech Communication Association, Chicago, IL.

Poole, M. S., and DeSanctis, G.: 1989, Understanding the use of group decision support systems: The theory of adaptive structuration, In J. Fulk, and C. Steinfield (eds.), *Organization and communication technology* (pp. 173-193), Newbury Park, CA: Sage.

Rafaeli, S.: 1988, Interactivity: From new media to communication, In R Hawkins et al. (eds.), *Advancing communication science: Merging mass media and interpersonal process* (pp. 110-134) Newbury Park, CA: Sage.

Rafaeli, S., Sudweeks, F., Konstan, J., and Mabry, E.: 1994, *ProjectH Overview: A quantitative study of computer-mediated communication [On-Line]*, Available:

http://www.arch.usyd.edu.au/~fay/projecth.html

Reid, E.: 1991 *Electropolis: Communication and Community on Internet Relay Chat*, Honors Thesis, University of Melbourne, Department of History, [On-Line], Available: http://www.ee.mu.oz.au/papers/emr/

Rheingold, H.: 1993, *The virtual community: Homesteading on the electronic frontier*, Reading, MA: Addison-Wesley, [On-Line], Available:

http://www.well.com/user/hlr/vcbook/

Rice, R.: 1984, Mediated group communication, *in* R. E. Rice (ed.), *The new media: Communication, research and technology* (pp.129-156), Beverly Hills, CA: Sage.

Rice, Ronald E.: 1989, Issues and concepts in research on computer-mediated communication systems, *in* J. A. Anderson (ed.), *Communication Yearbook, 12*, (pp. 436-476), Newbury Park: Sage.

Rogers, E.: 1986, *Communication Technology: The new media in society*, New York: Free Press.

Rubin, A. M.: 1981, An examination of television viewing motives, *Communication Research, 8*, 141-165.

Rubin, A. M.: 1983, Television uses and gratifications: The interactions of viewing patterns and motivations, *Journal of Broadcasting, 27*, 37-51.

Rubin, A. M. and Bantz, C. R.: 1989, Uses and gratifications of videocassette recorders, In J. L. Salvaggio and J. Bryant (eds), *Media use in the information age: Emerging patterns of adoption and consumer use* (pp. 181-195), Hillsdale, NJ: Lawrence Erlbaum.

Schaefermeyer, M. J. and Sewell, E. H., Jr.: 1988, Communicating by electronic mail, *American Behavioral Scientist, 32*(2), 112-123.

Schmitz, J. and Fulk, J.: 1991, Organizational colleagues, media richness, and electronic mail: A test of the social influence model of technology use, *Communication Research, 18*(4), 487-523.

Sproull, L. and Kiesler, S.: 1986, Reducing social context cues: Electronic mail in organizational communication, *Management Science*, 1492-1512.

Stevens, J.: 1986, *Applied Multivariate Statistics for the Social Sciences*, Hillsdale, NJ: Lawrence Erlbaum Associates.

Sudweeks, F. and Rafaeli, S.: 1995, How do you get a hundred strangers to agree: Computer mediated communication and collaboration, *in* T. M. Harrison and T. D. Stephen, (eds). (pp. 115-136.) *Computer networking and scholarship in the 21st century*, New York: SUNY University Press, [On-Line] Available:

http://www.arch.usyd.edu.au/~fay/papers/strangers.html

Tabachnick, B. G., and Fidell, L. S.: 1989, *Using multivariate statistics* (2nd ed.), New York: HarperCollins.

Tan, A.: 1985, *Mass communication theories and research*, (2nd ed.) New York: McMillan.

Thompsen, P. A., and Foulger, D. A. May, 1993, Effects of pictographs and quoting on flaming in electronic mail, Paper presented to the International Communication Association, Washington, D.C.

Trevino, L. K., and Webster, J.: 1992, Flow in computer-mediated communication, *Communication Research, 19*, 539-573.

Strenski, J.: 1996, The evolving practice of public relations in North and South America, *Public Relations Quarterly, 41*(1), 27-28.

Walker, J. R. and Bellamy, R. V.: 1989, October, *The gratifications of grazing: Why flippers flip*, Paper presented at the annual conference of the Speech Communication Association, San Francisco, CA.

Walker, J. R., Bellamy, R. V. and Truadt, P. J.: 1993, Gratifications derived from remote control devices: A survey of adult RCD use, *in* J. R. Walker and R. V. Bellamy (eds.) *The Remote Control in the New Age of Television.* (pp. 103-112), Westport: Praeger.

Williams, F., Phillips, A. F., and Lum, P.: 1985, Gratifications associated with new communication technologies, *in* K. E. Rosengren, L. A. Wenner and P. Palmgreen (eds.), *Media gratifications research* (pp. 109-122), Beverly Hills: Sage.

Webster, J., Trevino, L. K., and Ryan, L.: 1993, The dimensionality and correlates of flow in human computer interactions, *Computers in Human Behavior, 9*, 411-426.

Witmer, D. F.: 1998, Practicing safe computing: Why people engage in risky computer-mediated communication., *in* F. Sudweeks, S. Rafaeli, and M. McLaughlin, (eds), *Network and Netplay: Virtual groups on the Internet*, (pp. 127-146), Menlo Park, CA: AAAI/MIT Press.

Witmer, D. F., and Katzman, S. L.: 1998, Smile when you say that: Graphic accents as gender markers in computer-mediated communication, *in* F. Sudweeks, M. L. McLaughlin and S. Rafaeli (eds). *Network and Netplay: Virtual Groups on the Internet.* (pp. 3-11), Boston: AAAI/MIT Press.

Yates, J. and Orlikowski, W. J.: 1993, *Knee-jerk anti-LOOPism and other e-mail phenomena: Oral, written, and electronic patterns in computer-mediated communication*, MIT Sloan School working paper #3578-93, [On-Line] Available: http://ccs.mit.edu/CCSWP150.html