Japanese Uses of the World Wide Web: A Time-Series Exploration of Uses and Gratifications Theory

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Abstract:

Entertainment overrides information among Japanese Web users as time passes and as compared with US and Mexican counterparts. This survey study applies uses and gratifications theory to new communication technologies. The survey instrument of Witmer and Taweesuk [1998] translated into Japanese examined psychological and functional uses of the World Wide Web among 200 Japanese users in 1997, 2000 and 2005, asking how they use the Web, their attitudes toward it, and the extent to which their use of other media has changed since using the Web. The study also compares participants' responses from Japan with those from the previous US and Mexico study and suggests that the differences may be in part cultural and in part technological determinism in the form of a learning curve. The trends implied by the data have been borne out in web advertising advances, in social networking, and in the growth of mobile web search portals subsequent to the data collection.

Keywords：web, uses-and-gratifications, navigation, advertising

l. Introduction

With a master's degree in communication media studies, in 1993 I heard a Japanese lawyer argue against the vice-president of Visa credit card marketing: the Web would not support business because trust based on a hand-shake was impossible. The Web was only three years old in 1996 when I arrived in Japan at the dawn of the age of commercial cyberspace. I was dumbfounded at a businessperson reading a newspaper on a cell phone: Could the hyperlinked world fit onto such a small screen?

By 2006, my 3G cell phone could display in Japan only a very limited selection of news stories in English, but now it navigates to the New York Times mobile website. The popularity of the mobile web can be seen at a glance on any commuter train in Japan.

In the United States, on the other hand, "Most Americans cannot find the Web on their cell phones." So said Google CEO Eric Schmidt [2008]. On many cell phones in the US, the mobile web does not exist.

To what extent do advances in technology, cultural forces, or market forces change the Web in Japan? How does Web motivation, ease of use, affinity, displacement of other communication devices change as time goes by?

A chronology of the Web in Japan, matching technological innovation with usage pattern statistics, would be one way to address these questions. However, the current study takes an approach grounded in a theory of communication remarkable in that interactive users are empowered to reliably report their own motivations for media.

This survey-based study is a time-series comparison of Japanese Web use in Japan over several years. The survey instrument was administered three times: in 1997 to a small sample of businesspeople, and 2000 and 2005 to a much larger sample of university undergraduates. Thus, this paper can offer a time-series study of Japanese Web use, inasmuch as a 200 respondent rate is generalizable. Further, by comparing results with another research in the mid-1990s in North America, the study offers a cross-cultural comparison of Web use in Japan with Western cultures. Finally, cultural and market effects of the Web after the study validate the direction of the findings' vector of burgeoning social networking and problematic advertising strategies.

In the three years since the survey data were collected, the intersection of advertising, social network sites, and the mobile web has succeeded in creating a new business model in Japan that is an elusive distant lucrative banner in the crystal ball of American entrepreneurs. The survey data are predictive of the transformation to the economically resilient mobile web, which may or may not be possible in America where cell phones websites are virtually nonexistent and social network sites fumble advertising.

2. Literature Review

Five academic studies are reviewed: Three of the studies are based on the well-established mass communication theory known as Uses and Gratifications. And two of the studies concern the newer area of inquiry known as web navigation. Next, advertising and social networking and cultural considerations are reviewed in the popular press, which can notice communication phenomena more quickly than the academic press.

Results drove the study to discover theoretical frameworks that could provide insight into such observations as cultural and /or time differences in how Web users are gratified by the medium, the

importance of how various users report moving around (navigation), and the decreasing tendency of Web users to shop despite new efforts by commerce to advertise on the Web.

(1) Uses and Gratifications Literature

Media users know and choose media use, according to the seminal paper of the mass communication theory called “On the use of the mass media for important things” [Katz, Haas, & Gurevitch 1973]. The theory is thus distinguished from media manipulation theories where the user may be unaware of choice and is virtually powerless over content. Initially drawing on studies of radio, the uses and gratifications theory continues to grow including TV and the Internet.

Three studies are reviewed.

[1] Witmer and Taweesuk [1998] found that for news, business, and education, the Web functions similar to traditional media: US and Mexican business communicators access the Web to pass time or out of habit, for arousal, to escape, to relax, and for social interaction. They found that although the Web did not replace use of other media, Web users tended to rely less on printed forms of communication such as magazines and newspapers, and that they read less for pleasure than people who did not use the Web. Witmer and Taweesuk suggested that uses and gratifications theory does not go far enough in its ability to describe what Web users do online. They found small differences between the American respondents of two countries, such as that Mexican users consider the Web more important and a more interesting way to spend time than do the US users.

[2] Comparing the Web to television, Ferguson and Perse [2000] found of college students, “In order for the WWW to be a functional alternative to television, its use should be undertaken for similar reasons”[Television section, para. 8]. Ferguson and Perse found the Web may be like TV in that entertainment was a motive for visiting the Web. Ferguson and Perse found, “Going on the WWW to fill empty time was our sample’s second-most endorsed motive.”And “The results of our study suggest that the WWW differs functionally from television viewing”[Discussion section, para. 3]. The reason for the difference from TV watching was that Web surfing does not appear to be a relaxing pastime in part because of the need to “click”to move around, leading to the conclusion that “the Web may not be a functional alternative to television viewing for relaxation”[Discussion section, para. 4]. Ferguson and Perse concluded, “There are perhaps more similarities between television viewing and Web surfing than differences… But many computer users may not want the Web to be like TV”[Discussion section, para. 4].

> [3] . A picture emerges from uses and gratifications theory as well as from web navigation theory of a TV-like Web. The future web seems to be changing away from traditional TV and traditional Web in content and function in the minds of its consumers and manufacturers. Therefore, consider—as respondents to this survey have—the changes that may be coming to the Web in terms of advertising, an assault to anyone who has tried to read a Web newspage without being inescapably distracted by flashing advertisements moving in ways impossible for an eye evolved to track movement to ignore.

Turning from users' perceptions to the point of view of advertisers, Ko, Cho, & Roberts [2005] studied participants in Korea and in the United States matching motivations with activity at websites. Seeking to understand the hugeness of the Web by the study of advertising, the researchers reasoned from uses and gratifications theory. "… Only a crude understanding exists about the role of 'interactivity' concerning the measurement of 'advertising effectiveness.' Therefore, it is imperative to examine consumers' psychological and behavioral aspects in Internet usage from the perspectives of interactive advertising" [Ko et al 2005: 57]. They assumed that "… interactivity of the Internet would lead to more positive attitudes toward a Web site and brand, as well as a higher level of purchasing intentions" [: 58]. Thus, they reasoned, a steadily increasing shopping activity may be expected. They found two dimensions of interactivity (how people use the Web): human-message and human-human [: 59].

Cultural characteristics have helped researchers study Web use. "…Web sites in highly collectivistic cultures (i.e., cultures that encourage group harmony and activities) are more likely to utilitize Internet features that promote interactions among people (i.e., human-human interaction) (Cho and Cheon 2003)" [Ko et al 2005: 60].

Users like having something to do at a website, Ko et al. found. If the motive is to get information, the users interact with the message; on the other hand, if the motive is social, the users interact with other people [Ko et al 2005: 57].

Ko et al. report a high satisfaction among participants for a mixture of information retrieval and human-human interaction. "This study found that the means for human-message interaction are higher than those of human-human interaction. This finding might imply that people are more likely to interact with the content than with the advertiser and/or other customers. Yet, the effect of human-human interaction on attitude toward the site was stronger than that of human-message interaction…Web sites should focus more on human-human interactive functions to generate more positive responses from consumers" [Ko et al 2005: 67].

(2) Web Navigation Literature

The sense of movement during navigation engages Web users.

> [1] Moving from website to website is a necessity of using the Web. Juvina and van Oostendorp [2006] modeled Web navigation and obtained results show that "spatial-semantic cognitive mechanisms seem to be crucial in adequately performing Web navigation tasks" [: 258]. Their hypothetical model included spatial terms because subjects often referred to locations: "'Where am I', 'Let's go in another place', 'I'm stuck in these analyzers', 'I saw it somewhere'" [: 260]. They found that how users move around the Web pages "could not completely explain task outcomes" but could "indicate facets of task outcomes that were not explained by the hypothesized factors" [: 266]. They speculated that ineffective, dissatisfying methods of navigation on a desktop computer might be useful in a mobile device, where "... Flimsy navigation style, for instance, might not necessarily be associated with disorientation" [: 268]. Cautioning against analyzing only textual information gathering, they warned, "Presently [2006], the existing cognitive models of web navigation ignore almost completely the spatial dimension, and treat solely the semantic dimension of Web navigation (information scent)" [: 268].
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> [2] Web navigation support from agents [Loia, Pedcrycz, Senatore, & Sessa 2006] provided terminology and concepts useful to illuminate my survey results. The forward-looking experiment of Loia et al. [2006] tried to establish a framework for personalized navigation: robotic agents would recommend related documents according to the user's responses. But if a robotic agent helps, they wondered whether "the surfing activity" [Recommendation Agent: usage scenario section, para. 1] would continue to be fun.

(3.) Advertising and Social Networking and Cultural Considerations

Advertisers on the Internet struggle to become compatible with social networking, as respondents to my survey indicated by allegiance to advertising-free portals. "Eventually" the social network websites will be able to sell advertising, said the CEO of Google, Eric Schmidt [2008], adding that advertising on the mobile web will be easier than advertising on the traditional Web because "the devices know where they are and are highly personal." Some mobile advertising will have the highest ad rate because of the ability to target individual phones, Schmidt explained, but "we don't know which ones [Schmidt 2008]."

Cell phone ads are much more accepted in China and in Japan than in the US. "Mobile advertising can become a very important market" in China [Chao 2007] because of interactivity. For example, in a BMW site advertised through banners and text links on wireless portals, Chinese customers customized a car and made appointments to test drive [Chao 2007]. The Chinese government in January 2009 issued licenses for next-generation 3G wireless services.

Regarding specifically cultural considerations of websites, a letter to the journal Nature pointed out that many scientists in Japan suffer from a lack of international visibility by being difficult to find by search engines and in publication databases [Ito & Wiesel 2006]. The homepage of institutional websites should include the word "research" in English that links to a summary of the research in a style familiar to international visitors, wrote Ito & Wiesel, who also noted the difficulty of searching the PubMed database on Asian scientists with similar names.

Years of fast cell phone speed and mobile websites have led to advanced Japanese demands of the Web. Google in Japan lags behind. "While Americans raved when Google launched a mobile version of maps last August, the Japanese panned it for being too slow and hard to navigate" [Hall 2008b].

3. Research Questions

The present article extends the previous research of Witmer and Taweesuk [1998]. Administration of virtually the same survey instrument -- translated from English into Japanese -- allows comparing some data obtained from this Japanese study and their survey of Web users in the US and Mexico. Time-study of Japanese respondents at 2000 and at 2005 is also possible.

Do the data indicate difference between Japanese and American respondents, and between the three Japanese respondents at data collection phases (1997, 2000, and 2005), regarding:

Research question 1. Functions of using the Web?

Research question 2. Motivations for using the Web?

Research question 3. Affinity for the Web?

Research question 4. Use of the Web and other media?

4. Sample

(The demographics for gender and age indicate comparability of a study of American respondents [Witmer and Taweesuk 1998] with the present study of Japanese respondents to the same survey instrument. The American respondents were slightly more highly educated than Japanese respondents. This study had more than twice the number of respondents. Those statistics for the American study are given in footnotes.)

Some two hundred Japanese[1] people participated in this study: 28 professionals (from companies in Tokyo in 1997); 172 university undergraduates (82 students in 2000 in Osaka; 90 students at the same public institution in 2005). It is noteworthy that an email address was not required by nor provided by the public university although virtually all respondents had access to the Web. (Within a couple years of the survey's completion, the university provided every student with its domain-based email address.)

In total, a high percentage of my respondents were female.[2] Of the 27 respondent professionals who indicated gender, 14 were female. However, student groups were mostly female: of the 151 respondent students who indicated gender, 74.2% were female, matching the 70% female undergraduate population of Osaka University of Foreign Studies during those years.

Of the 25 respondent professionals who indicated their level of education,[3] 25.0% had completed some college, 44.0% had completed a baccalaureate degree, and 28.0% had completed a master's degree. All of the respondent students had completed some college, although most (83.6%) incorrectly reported a level of education as "high school" rather than "some college."

Incomes of the student groups were low compared with the professional group. Of the 22 respondent professionals who indicated their level of income, most (68.2%) earned between Japanese Yen 4,000,000 and 9,000,000 per year. Among the students who reported income (73.7%) most (91.2%) reported negligible earnings.

All participants were at least 18 years old.[4] Professionals indicated age with a range mostly (75.0%) evenly spread among four-year groups (18-24 year-olds; 25-29; 30-34; 35-39; and 40-44) with the average age 31. Of the 152 students who indicated age, most (90.8%) were between the ages of 18 and 24, with the average age also between 18 and 24.

1 The U.S./Mexican study of Witmer and Taweesuk (1998) had a third as many participants (N=71) during the late 1990s: 21 Mexican nationals, 30 U.S. public relations professionals, and 20 U.S. student practitioners. [Witmer and Taweesuk 1998]

2 In the U.S./Mexican study most respondents were female [Witmer and Taweesuk 1998], as in the Japanese study.

3 U.S./Mexican study participants were more highly educated than in the Japanese study: 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 [Witmer and Taweesuk 1998].

5. Methods

To identify respondents' characteristic use the World Wide Web, I utilized the questionnaire of Witmer and Taweesuk [1998] that I got translated into Japanese by a co-worker at a teaching institute in Tokyo [Nohara 1997].

(1) Functional uses of the Web

Respondents chose three favorite types of sites from a list of 20 categories and indicated sites most frequently accessed. Open-ended questions asked what types of information they found useful and which on-line services were used.

(2) Motivations for Using the Web

The questionnaire included 30 reasons for watching television reworded to relate to the World Wide Web.

The questionnaire allowed respondents to indicate their level of agreement with each item by checking boxes: 1) Strongly Agree; 2) Agree; 3) Neutral; 4) Disagree; 5) Strongly Disagree. In addition, the questionnaire included an open-ended item that asked respondents to state their main reasons for accessing the Web.

(3) Attitudes Toward the Web

The questionnaire used three indices to measure the relative importance of the Web in users' lives (affinity), perceived realism of Web content, and respondents' perceived ease of using the Web.

(4) Use of the Web and Other Media

The instrument asked the average number of hours respondents used the Web and their levels of experience. Respondents indicated how they used other communication technologies, which devices they owned (CD players, cell phones, TV, etc.), and how they navigated the Web.

6. Data Analysis

For the open-ended questions, qualitative content analysis was performed with the help of a bilingual colleague -- a Japanese doctoral candidate -- translating from Japanese to English. In English, I entered the respondents' comments into a database. Each comment was read through for key terms. Preliminary categories were developed and condensed into fewer categories once, and

4 In the U.S./Mexican study, of the 65 individuals who indicated age, most (78.8%) were between the ages of 18 and 34, with the average age under 30 [Witmer and Taweesuk 1998]. Thus age ranges of both study participants are young adults, with Japanese average age 18-24 and Americans' 18-29.

then the fewer categories were condensed again.

The quantitative analysis was driven by the opportunity to compare results with a previous study in North America. The questionnaires were end-coded and data entered into Excel according to the coding scheme of Witmer and Taweesuk [1988] provided as a courtesy among colleagues.

7. Results

I will report the results as a time study of Japanese Web use, and in comparison with US/Mexican respondents. It is not too much of a stretch to draw a comparison between the groups, because the sample of American and Mexicans was closely matched in terms of gender, age and level of education to the sample of Japanese. This was a survey, not an experiment, and therefore conditions could not be equal; admittedly, there are threats to validity because of unequal conditions.

Then I will speculate on the historical (time span difference), cultural and technological causes of differences in responses.

(1) Functional Uses of the Web

The most popular type of website by far among Japanese survey participants was entertainment; news followed in second place; travel and personal home pages were equally popular in third place. By contrast, in the US/Mexican study the most popular type of website was news delivery.

In my Japanese study, of the 198 respondents who indicated their favorite types of websites, 27.8% ranked "Entertainment" first, and 52.0% ranked it as one of their top three favorites. By contrast, in the US/Mexican study, 20.3% ranked “News” first, and 48.4% ranked it as one of their top three favorites.

In my Japanese study, news sites were ranked first by only 5.0% of respondents, but were among the top three favorites for 34.9% of the sample group. In the US/Mexican study, business sites were ranked as first choice of favorite sites by 25.0% of respondents, and were among the top three favorites for 42.2% of the sample group.

In my Japanese study, the third most popular type of site among respondents were travel pages and personal home pages, which were among the top three favorites for 30.8%, but ranked first among only 8.6%. In the US/Mexican study, the third most popular type of site among respondents was educational, which was among the top three favorites for 32.8%, but ranked first among only

4.7%.

In my Japanese study, the open-ended question that probed which types of information respondents found most useful on the Web did not confirm the ordinal data, but indicated that my respondent professional group sought computer-related information (typified by one of their descriptions as "software and hardware information that is quickly changing"), perhaps because they worked in architecture and pharmaceutical businesses. My respondent student group sought mostly news-related websites, followed in equal popularity by websites with information about other countries and websites about education. All Japanese respondents explicitly praised the value of the Web in finding country-specific information. In the US/Mexican study, 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 respondents preferred news-related websites, and 17.7% accessed business information.

In my Japanese study, the open-ended question that probed which websites participants accessed most frequently indicated that the most often visited sites among the professionals were search engines and sites for computer needs; search engines (especially Yahoo! Japan) and shopping sites were the most frequently visited types of sites among the students. Notably, in the 2005 student group, frequently visited types of sites included, although not in great numbers, specialized websites for blogs and the on-line encyclopedia Wikipedia. In the US/Mexican study, the open-ended question that probed which websites participants accessed most frequently indicated that the most often visited sites pertained to news (56.5%), entertainment (25.0%), and sports (14.5%).

(2) Motivations for using the Web

In my Japanese study, almost all the respondent professionals wrote "information" to explain the reasons they accessed the Web; a few specified "news" and "software" as information targets.

In my Japanese study, among the 71.1% of respondent students in 2005 who volunteered reasons for Web use, curiosity and shopping were most frequently mentioned. Only sometimes did descriptions of Web use include what would be done with the information gathered. "Information" was by far the largest named category, frequently modified by Japanese terms for "various" and "instantaneous." On the other hand, the category I called "music" included what the respondents called "information about the latest music" and "music words." I could have collapsed "music" into the "leisure time" category, but users' needs for special software to experience music files seemed to justify "music" being a unique category among reasons to access the Web.

In my Japanese study, among the respondent students in 2000 who wrote in their reasons for Web use, most cited “information collection” and “email.” A explanation aligned precisely with the uses and gratifications theory of mass communication was typical: “It’s fun. I feel I can create relationship with others on the Internet.”

As for quantitative responses, in my Japanese study, both professionals and students favored entertainment websites. However, their rankings of the appeal of news, shopping, travel, and personal home page websites differed (see Table 1). Further, the student groups differed: only the 2005 students included shopping and personal home pages among the three favorite types of websites.

In my Japanese study, in the professional group, 53.8% ranked news sites in the top three, 44.4% favored entertainment sites, and 37.0% preferred travel sites. In contrast, the 51.2% of the earlier (2000) student group preferred entertainment websites, 35.4% favored travel sites, and 31.7% listed news sites in the top three. In contrast, the 54.3% of the later (2005) student group preferred entertainment websites, 38.0% favored personal home page sites, and 29.3% listed shopping sites in the top three. In the pooled student groups, 52.7% preferred entertainment websites, but did not agree in second and third ranked preferences.

In contrast to the Japanese students, the Japanese professional group preferred news sites. Professionals agreed with the early student group (2000) in choice of the top three site types as news, travel, and entertainment, although the order was different. The later student group (2005) alone selected personal home page and shopping sites among the favorite three web kinds of websites. [See Table 1]

By contrast, Mexican and US business communicators favored news, business, and educational websites [Witmer & Taweesuk 1998].

(3) Attitudes toward the Web

In my Japanese study, responses measuring affinity were very different from the US/Mexican study. The 174 Japanese participants who responded to the questionnaire items that addressed attraction indicated considerably less affect for the Web than the US/Mexican respondents (see Table 2).

Table 2. Affinity for Web: Cultural Comparison

Questionnaire item	Japanese (%)	US/Mexican (%)
Could do without Web	52.9	61.8
Wouldn't miss Web	26.4	60.6
Did not prefer Web	78.2	60.3
Web important daily	20.1	32.4

As for ease of Web use for news, there was a good match between my Japanese respondents and the US/Mexican respondents. To be more specific, both cultures' respondents were divided on their perceptions of TV and Web ease for updating news. Japanese reported 43.7% (US/Mexican figure 45%) disagreement and Japanese reported 34.5% (US/Mexican figure 35.2%) agreeing with the statement "If I want up-to-date news, it's easier to watch television than to use the Web."

In my Japanese study, less than half (45.4%) participants considered the Web easy to use for finding information, agreeing, "It's easy to find information that I'm looking for on the Web." However, the bulk of US/Mexican participants considered the Web easy to use in this manner.

In my Japanese study, the majority, 59.2%, responded that they usually could find specific information on the Web, much less than the 84.5% in the US/Mexican study.

As for finding information quickly and easily, Japanese and American respondents agreed with some media comparison statements and disagreed on others. 69.0% of the Japanese respondents (compared with 74.7% of US/Mexican respondents) believed they could find information more quickly on the Web than in the library, but 45.4% of Japanese (compared with 66.2% of US/Mexican respondents) considered it easy to find information on the Web, and 43.1% of Japanese (compared with 63.4% of US/Mexican respondents) considered finding information on the Web easier than by non-electronic sources. In other words, information is easier to find on the Web than in the library; but finding information on the Web is not always easy.

In my Japanese study, the professionals (1997) agreed with the first student group (2000): the Web is easier than TV for updating news; but the later student group (2005) perceived easier Web use (see Table 3). Comparison of the latter years shows a sharp increase in the experience of immediacy of news on the Web. In other words, respondents in 2005 could find newer news from the Web than respondents could find in 2000.

For Japanese participants, perceived ease of finding specific information on the Web compared with finding the information using non-electronic sources correlated mildly with the frequency of Web use (alpha = .37, p = .01). In other words, people who used the Web frequently could find what they wanted on the Web more easily than finding it elsewhere. Moreover, one other dimension for ease of use was related to frequency of use: Perceived ease of finding information on the Web correlated mildly with the recent-Web-use (alpha = .37, p = .01). In other words, daily Web users could find information more easily than once-a-week Web users.

By contrast, perceived ease of finding information of the Web correlated mildly for US/Mexican participants [Witmer & Taweesuk 1998] on only the ease-of-use dimension of average number of hours users spent on the Web (alpha = .34, p = .01). In other words, recent Web use was less of a factor in ease for non-Japanese participants.

This“easy of Web use”difference among participant groups has implications for effective learning and use of communication technology. This dimension could predict the difference between a Web wanderer who follows a trail to a junk pile or a Web wanderer who follows a trail to a treasure.

(4) Use of the Web and Other Media

In my Japanese study, a large majority (68.9%) of respondents reported using the Web five hours per week or less and 16.6% reported using the Web 10 hours per week or more. In the US/Mexican study, most respondents (51.5%) reported using the Web five hours per week or less.

In my Japanese study, a minority (20%) reported that they had accessed the Web from 20 to 40 times, and nobody reported higher frequency than 40 times per week. In the US/Mexican study, 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.

Most participants across cultures studied used the Web at least on a weekly basis. In my Japanese study, of the survey participants reporting recency of Web use (2.5% didn’t respond to this item) 82.6% had accessed the Web within a week of completing the questionnaire. Most (60.0%) had used the Web within 24 hours. In the US/Mexican study, 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.

Technology permeation can be seen in the comparably high percentages of personal ownership of computers and cellular phones across cultures. In my Japanese study, most participants (68.5%)

reported owning at least one computer with a CD ROM, and 10.1% indicated they owned at least one computer without a CD ROM; a majority of participants owned at least one cellular phone (78.8%) but nobody owned a car phone (0%). In the US/Mexican study, most people (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 participants owned at least one cellular phone (61.9%) or car phone (15.5%).

In my Japanese study, of the participants who responded to the items that asked about the extent to which their Web use affected their use of other media, 70.6% indicated their television viewing had not changed (184 responded), and 24.5% indicated it had decreased or greatly decreased. A total of 79.9% respondents indicated their viewing of videotapes had not changed (184 responded), and most had not changed (184 responded) their radio (73.4%) or stereo listening (183 responded) (78.1%).

However, in the only categorical contrast to the US/Mexican data (see Table 4) related to media changes due to Web use, 62.7% of the Japanese respondents (183 responded) indicated their library use had not changed. While the reading habits of most survey participants remained unchanged [69.9% for magazines (183 responded), 70.0% for newspapers (180 responded), and 72.4% for books (181 responded of 200)], some decrease in reading was evident in these data. Magazine reading decreased for 20.2% of the respondents; 22.8% reported a decrease in their newspaper reading; and 15.0% read fewer books for leisure. Movie going remained unchanged for most (81.7%) respondents.

Japanese reported watching less TV than Americans; TV watching of Japanese students greatly declined since their Web use began. In my Japanese study, many more students (25.4% in 2000; 28.3% in 2005) reported a decrease in television viewing than did professionals (7.1% in 1997), a greater gap than reported [Witmer & Taweesuk 1998] between US (15.0%) and Mexican respondents (11.1%).

In my Japanese study, the participants from the professional (1997) and a student group (2000), as in the US/Mexican study, used the Web primarily as a tool for news gathering and information seeking, with the other group of students (2005) using the Web more for entertainment than for news.

A major functional use of the Web among all cultures (Japanese, US, and Mexican) was e-mail.

The Japanese users tended to perceive the Web as less important to their lives than did the US/Mexicans, among whom increased Web use correlated with more perceived importance. Japanese users agreed with US/Mexicans [Witmer & Taweesuk 1998] that the Web was not supplanting use of most other media.

8. Discussion

(1) Functional use of the Web

My Japanese respondents' preference for entertainment sites overshadowed US/Mexicans' for news.

(2) Motivations for using the Web

Seeking information stood out as the primary motivation among my Japanese respondents, in contrast to US/Mexicans' search for research needs.

My Japanese student groups described in open-ended responses successful searches on the Web for social needs, music, and fun. In contrast, Witmer & Taweesuk [1998] described the American respondents' appetites for news, research, and business information, with no comments about open-ended responses for social components of Web searches.

(3) Attitudes towards the Web

Regarding ease of use, the different cultures reported similar Web/TV ease of use for updating news, but also reported different perceptions of ease of Web use, with Japanese reporting more difficulty. This disparity may be due to Japanese and US/Mexican respondents using the Web a significant amount for something other than updating news. Further, Japanese reported more difficulty than US/Mexicans in finding specific information on the Web. Perhaps Japanese cast their net of inquiry wider than US/Mexican searchers of the Web, or perhaps the social component famously embedded in the Japanese culture is more difficult to search on. The social network functions of the Web have grown greatly in the years since the Japanese and the US/Mexican data were gathered, perhaps proving the principle of need for social information on the Web. Perhaps Japanese pioneer a particular style of social use of the Web. From the historical use of pagers through the modern use of social Internet sites, Japanese have tended towards anonymity and virtual relationships that do not extend to the flesh and blood world, according to a University of Tsukuba researcher: "Such unique preference for anonymity among Japanese people can be observed even in comparison with other countries in Asia" [Ishii 2008: 034].

Japanese respondents reported difficulty using the Web; and time series indicated the difficulty decreased at each interval measured (1997, 2000, and 2005). US/Mexicans reported less difficulty than Japanese, and the US/Mexicans professionals and students agreed in degree of ease of use. The Web has become easier to use because of the graphical user interface, a historical attribute which continues to develop from the strictly IP address defined academic Internet of pre-1993. Also a cultural learning curve of Web adoption and Web penetration is at play.

(4) Use of the Web and other Media

A greater majority of Japanese respondents than US/Mexicans reported cell phone ownership. In addition, Japanese respondents reported owning no car phones, compared with about 1/8 of their North American counterparts. It is likely the case that Japanese in this study did not drive cars; and that they accessed the Web by mobile phone during mass transit.

Web use had the effect of decreasing use of other media, Japanese participants and US/Mexican participants said in all categories except for library use; Japanese library use remained unchanged by Web use. Library research may be difficult to carry out on a cell phone.

Web use was never correlated in Japanese nor US/Mexican participants with increase of the use of any other medium (library use, radio, TV, videos, movies, newspapers, magazines, stereo, or reading books for leisure).

9. Limitations of the study

A reliability issue appears. Japanese respondents provided incorrect responses (college students reporting that they hadn't completed high school) and provided ordinal responses that were inconsistent with their open-ended responses. Why didn't the US/Mexican study suffer either of these reliability problems? Is the fault the survey instrument, the instructions of the researcher, or the change in the Web during the few years from the time of the construction of the survey instrument to its use in Japan? Witmer and Taweesuk [1998] noted that their study was limited by the survey instrument being administered only in the English language to respondents whose native language was sometimes Spanish. On the other hand, in the current Japanese study, administering he questionnaire in the participants' native language seemed to introduce reliability issues.

In the present paper, limitations in research personnel resulted in coding done only by one person (the author), and limitations of the author's language ability necessitated translation of open-ended responses by a bilingual colleague.

Although not a significant, random cross-section of the population, the Japanese sample has

three times as many respondents as the American sample. The limitations of both studies' samples affect generalizability to larger populations, as stated in the well-respected American study [Witmer and Taweesuk 1998].

To corroborate data findings, it would have been helpful to obtain figures of users visiting different Web sites by category, and to obtain comparative figures of how many mobile phone users in North America and Japan have data plans that allow them Web access. However, the difference in cultural usage and technology of mobile phones threatens the meaning of those statistics.

10. Implications and Conclusions

Uses and gratifications theory could explain why Japanese participants do not find Web use easy, although they find it faster than library searches for information. Mexican/US tend to use the Web for research. Their technology of mostly PCs supports larger search engine memory than mobile web devices. Furthermore, Web navigation theory allows drawing the conclusion that flimsy less robust navigation on the mobile web favored by Japanese may be correlated with preference for entertainment use as opposed to research and library use.

Instead of being a cultural attribute, the fast growth of Japanese mobile Web and social networking websites may be due to the technology. The preponderance of the mobile Web in Japan is only a glimmer in the eyes of advertisers for the mobile Web in America, who "hope for significant growth" of the Web on phones, according to Schmidt of Google. "My guess is that most of you [Americans] haven't used the browser on your phone, it doesn't work, or you can't find it" [Schmidt 2008].

Does difference in Web use motivations between Japanese and North Americans suggest that Japanese search for human-human interaction over human-message interaction? Is there an "intrinsic motivation" [Ko et al 2005] of cultural usage of the Web? Could differences in the Eastern and Western responses to the same questionnaire be accounted for by the differences in degree of what Ko et al [2005] cited as "collectivist cultures?"

As for Web navigation, Japanese respondents' greater difficulty finding information on the Web compared with US and Mexican counterparts may correspond to "disorientation" [Juvina & van Oostendorp 2006: 268]. Japanese culture emphasizes group harmony that may be difficult to perceive on the Web, leaving an individual Web user lost.

Were shopping and entertainment increasingly popular among Japanese year-by-year, and comparatively greater than US/Mexican respondents', effects of the Asians' slightly younger age

and slightly lesser education? Was the difference in Web function among cultures an effect of "intrinsic motivation" [Ko et al 2005], or rather more an effect of the changing content of the Web?

In the years after the data were collected, social networking sites and simulation sites have become widely popular in Japan as well as in the West. Recognizing "unique communications patterns among Japanese people" does not reveal yet "how cultural factors affect the usage patterns of the internet worldwide." [Ishii 2008: 035]. Despite academic ignorance, marketing attempts are made to model the sites on the culture, seen in three examples of Splume, Gmail, and Mixi.

As journalist Robson [2007] reported, "'Splume' is targeted at the Japanese not only through language, but also in its softer visual tone, its less commercial sandbox mentality and the avatars' mannerisms, allowing users to bow gracefully when they meet a stranger." Japan's Splume Corp. launched a beta version in summer 2007 of a simulation site the sort popular in the West in "Sim City" and the more recent "Second Life" graphic interface pastimes.

Google attempts to model culture for Japanese users by putting some 600 graphic accents, or smiley faces, into its web-based email Gmail [Hall, 2008b]. These are also known as emoticons in English or e-moji in Japanese (e for picture and moji for letter). The popularity of smileys in Japanese text messages is far more frequent and technologically easier than a decade earlier; content analysis [Witmer & Katzman 1998] indicated not many users of graphic accents in a worldwide sample and a slight skew towards female use over males'. Recently, graphic accents are built into keyboards and software for both Eastern and Western languages.

In June 2008, Japanese social network site Mixi accounted for 41% of visitors for social networking sites in Japan, according to research firm comScore, far ahead of sites imported into Japan such as MySpace and Facebook. Cyberspace populations are strongly affected by their cultural real space. "The use of online communities is affected by cultural factors. Japanese users prefer virtual-world–based communities, while their Korean counterparts prefer real-group–based ones" [Ishii 2008: 025- 026].

Advertising is the as-yet-missing link that explains the shift in Web use between social-network-and-entertainment-use over news-and-shopping. Users don't go to social network and entertainment sites to buy stuff; the corollary is that advertisers seeking to monetize the Web cannot easily put their valuable, recession-proof targeted ads on social network and entertainment sites. As a Google spokesperson said, "If only we could schedule the revolution." Larry Page, one of Google founders, referred to the revolution in monetization of the Web.

“Online traffic, in other words, is moving towards sites where advertising has so far proved ineffective and is therefore cheap,” writes the Economist [November 2008].

The ability to find newer news in 2005 than in 2000 among Japanese respondents probably was not due to liking for news sites, and therefore other explanatory factors than news gratification should be considered. Perhaps news as a kind of wallpaper automatically chosen and displayed on more recent Web portals allows access of news to Web browsers who profess to have a greater liking for entertainment. The wallpaper news, moreover, is accessed as a spatial, not a textual, environment and therefore does not conflict with the entertainment activity of surfing the Web; both spatial and surfing aspects have been noted as attractive assets by web navigation studies.

In this non-probabilistic sample of Japanese students and business people, this study finds that following the scent of information over eight years to 2005 tends toward a pace of fun that is different from shopping and that is elusive to advertisers.

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Table 1.Website Types Preferred By Japanese Respondent Groups

Website type	Professional 1997 (%)	Student 2000 (%)	Student 2005 (%)
News	53.8	31.7	0
Entertainment	44.4	51.2	54.0
Personal home page	0	0	38.0
Shopping	0	0	29.3
Travel	37.0	35.4	0

Table 3. Time-series difference in Japanese Perceived Ease of Web Use v TV use (%)

	Professional 1997	Student 2000	Student 2005
Perceived Ease of Web use over TV use for updating news	34.5	31.7	59.1

Table 4. Relationship of World Wide Web use and use of other media for my Japanese and for [Witmer and Taweesuk, 1998] US/Mexican participants.

Medium Used	Unchanged (%)		Decreased or Greatly Decreased (%)	
	JP	US/MX	JP	US/MX
Television	70.6	72.7	24.5	21.2
VCR	79.9	83.1	-----	12.3
Magazines	69.9	58.2	20.2	23.9
Newspapers	70.0	56.1	22.8	24.2
Books (for Leisure)	72.4	72.7	15.0	19.7
Movies	81.7	80.3	-----	6.0
Radio	73.4	72.3	-----	9.2
Stereo	78.1	75.8	-----	9.1
Library	62.7	35.8	28.4	47.8

（2009.10.15 受理）