

The Self Online: The Utility of Personal Home Pages

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The objective of this study was to understand the utility of personal home pages for their creators. Combining survey research and content analysis, the study investigated how demographic and medium use variables, home page motives, unwillingness to communicate, and contextual age were reflected through Web page design. Data analysis revealed that most Web authors hosted a page for information and entertainment purposes, some for self-expression and for communicating with friends and family, and fewer for professional advancement or to pass time. Design tools supplied by the personal home page providers, Web page location, expertise with computers and the Internet, and Web author motivation influenced the look of personal home pages.

Personal home pages present a new channel of mass communication. Hosting a personal home page is convenient, affordable, and allows people to present a multi-mediated self, using audiovisual components and text to communicate to potential mass audiences. Personal Web publishing is quickly becoming a popular type of Internet use, even among children. Internet Service Providers and online portals like Yahoo! GeoCities, which provides Web publishing services to 5.5 million subscribers, aid this trend ("1.6 Billion Served," 2000). As both informative and expressive tools, personal home pages allow individuals to transcend from consumers of media content to media producers (Dominick, 1999). Web authors are not merely sharing information with others, they are also engaged in establishing a sense of self on virtual terrain. Even though some studies have looked at how Web pages serve as a tool for self-presentation online (e.g., Dominick, 1999; Smith, 1998), there has been little focus on the motivation of these Web authors and the personality characteristics that may affect self-disclosure online. This study examined how individuals used personal home pages to reflect their personalities online and the factors involved in this process.

Uses and gratifications (U&G) has been recommended for the study of new media technologies (Newhagen & Rafaeli, 1996; Rubin & Bantz, 1987) and has been used

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to examine different types of Internet use (Kuehn, 1994; Papacharissi & Rubin, 2000). U&G is a psychological communication perspective that looks at how people use media. According to this perspective, relatively active audiences select particular media to satisfy felt needs, which are influenced by a number of social and psychological factors that affect media selection and use (Rubin, 1994). U&G focuses on motives for media use, factors that influence motives, and outcomes from media-related behaviors. These allowed me to look at the personal traits, social context, and individual motivation that lead to the creation of a home page as a communication outcome. This perspective has been traditionally used to look at how individuals differ in their consumption of media content. This study employs U&G to examine how individuals differ in their production of media content, thus extending the perspective's theoretical grasp. U&G is a perspective that examines media use and content production as an aspect of such media use. Web authors function as both audience and producer, further underlining the appropriateness of U&G for this research.

Even though this study focused on one specific aspect of Internet use, it adds to the body of literature on the social uses of the Internet. Research on the potential effects of Internet use is divided, predicting either expanded social circles and increased social activity (e.g., Katz & Aspden, 1997), or reduced communication in the household, smaller social circles, and a greater sense of depression and loneliness (Kraut et al., 1998). Even though these studies contribute to our understanding of the Internet as a social medium, they do not adequately distinguish between different types of Internet use, since they do not take into account that the way individuals use the Internet could also influence its social consequences.

Acknowledging the importance of distinguishing between different types of Internet use, this study focused on one such use: Web authoring. A person's own social and psychological characteristics, together with individual motivation, could affect the social consequences of Internet use. The purpose of this study, then, was to examine motives for authoring personal home pages, consider how motives were affected by certain social and psychological characteristics, and examine how motives and characteristics affected self-presentation online. This purpose was met by examining personal home page content.

Self-presentation in general is not a new topic for communication researchers, and Goffman's (1959) remarks in the seminal *The Presentation of Self in Everyday Life* remain current and lucid. Goffman conceptualized the presentation of self in everyday life as an ongoing process of information management, whereby the individual is constantly trying to influence the impression others develop of him or her as a way of ultimately influencing others' attitudes and behaviors. Goffman distinguished between the expression that an individual *gives* and the expression that the individual has *given off*. *Given off* expressions are more theatrical and contextual, usually non-verbal, and presumably unintentional, while the expressions an individual *gives* are easier to manipulate. Based on this assumption, the individual sets the stage for a daily information game, whereby the impressions formed of

oneself become a result of one's expertise in controlling the information given and given off. Goffman referred to this game as a "performance." A Web page provides the ideal setting for this type of information game, for it allows a carefully crafted performance through which self-presentation is achieved under optimal conditions.

Turkle (1995, 1997), one of the pioneers in this area, has examined computer culture, identity, technology, and the creation of online communities. Turkle's work has consistently documented identity reinvention and community in cyberspace, noting that we are all "dreaming cyborg dreams" of fluid identities and minds that are downloadable to computers. The role of the computer as a prosthetic device that catapults one into cyberspatial interaction has also been examined by Haraway (1991), who has extensively advocated the eradication of what she considers mundane distinctions between human-animal, human-machine, and physical-non-physical dimensions. The anonymous and textual nature of cyberspace allows one to overcome "identity fixes," such as gender, looks, and disabilities. People choose to explore certain sides of their personalities (e.g., assertiveness) more extensively online, or even invent virtual life personae different from their real life personalities (Bolter, 1996). For certain researchers, the defining point is that the individual and computer function as one, and it is because of the machine that the individual is able to reinvent himself or herself online (Stone, 1996).

Relevant research indicates that net-based communities carry the promise of revitalizing communities and lost ties—of actually learning how to live in time and space without severing our social ties (Holmes, 1997; Jones, 1995; Sproull & Faraj, 1997). Baym's (1995, 1997) extensive study of online soap opera fan communities revealed individuals who developed their own forms of expression, used the group to develop and reaffirm their own senses of self and identity, developed relationships online, and shared behavioral norms that guided interaction. Similarly, Mitra (1997) described a network community that brought together the Indian diaspora to discuss issues of national concern. Other studies have further documented patterns of interaction, affiliation, and support in a variety of online environments (Beaubien, 1996; Ito, 1997). Online communities not only enhance social ties among people but also provide opportunities for political discussion and opinion expression (Hill & Hughes, 1998; Knapp, 1997; Poster, 1997). These accounts clearly outline the social benefits of online communities and identity presentation.

Scholars have shown some interest in personal home pages as such a medium of self-presentation. Dominick (1999) found that the strategies employed in personal home pages were similar to interpersonal strategies of self-presentation. For example, individuals used links on their personal home pages as a means of social association and sought positive reinforcement by inviting visitors to e-mail them or sign and view their "guestbooks" (a collection of visitor signatures and comments). Smith (1998) identified a similar taxonomy of Web-based invitational strategies, identifying the following items: feedback mechanisms (e-mail, guestbook, and others), vertical hierarchies (the position of items on the page from top to bottom), personal expertise, external validation (awards bestowed upon the site), direct address, and personality.

This study extended previous research on home pages by examining user motivation and characteristics in addition to home page content. Combining previous new media and personal home page research under a U&G perspective, this study focused on the following concepts and research questions.

Personal Home Page Motives

According to U&G, motives are general dispositions that influence people's actions taken for the fulfillment of a need or want. Many have argued that the Internet is a mass medium with the ability to fulfill interpersonal and mediated needs (e.g., Morris & Ogan, 1996). Neglecting to focus on the social and cultural uses of the Internet strips the medium of its meaning (Marvin, 1988; Turkle, 1995). In the past, interpersonal and mediated motives have been combined to look at the uses of new media (Flaherty, Pearce, & Rubin, 1998; Garramone, Harris, & Anderson, 1986; Papacharissi & Rubin, 2000). Motivation presents a key concept in media use and helps clarify how different individuals use personal home pages with different results. Personal home page motives should help us better understand the utility of personal home pages. Therefore, the first research question is:

RQ1: What are individual motives for hosting personal home pages?

Social and Psychological Factors

According to uses and gratifications, communication needs interact with social and psychological factors to produce motives for communicating (Rosengren, 1974). Researchers have studied the effects of societal structures and personality disposition to understand how they influence gratifications sought and obtained as well as audience behavior. Contextual age and unwillingness to communicate have been studied by both U&G and computer mediated communication (CMC) researchers and were employed for this study. This study begins with a focus on these two variables because they measure social habits, routines, and attitudes, but future research could consider additional concepts. The objective of this study is to examine social behavior, specifically self-presentation in a virtual context. Both contextual age and unwillingness to communicate measure face-to-face communication, not online communication. They are used to measure the quality of offline social interaction and to see how it may influence online motives and self-presentation. The use of these antecedent variables could help us draw links between social behavior, on and offline.

Contextual age. Contextual age is a life-position construct developed by Rubin and Rubin (1981) to account for the limitations of using chronological age in communication research. It consists of interpersonal interaction, social activity, mobility, life satisfaction, health, and economic security dimensions, all of which were used in this study. As "a transactional, life-position index of aging" (Rubin & Rubin, 1986),

researchers have observed that contextual age influences mass-mediated and interpersonal communication (Palmgreen, 1984; Rubin & Rubin, 1992), as well as CMC (Bruning, 1992; Papacharissi & Rubin, 2000). Contextual age is a way of overcoming the stereotypes associated with demographic variables and measuring the quality of life more accurately. The desire to pursue self-presentation and social activity online could be influenced by the overall quality of one's offline existence. Previous media and new media research has pointed in that direction; beyond that, however, estimating individuals' overall satisfaction with their lives could help us understand where the Internet fits into their daily routines, how it compares to other communication outlets, and whether it is used as an alternative channel for communication.

Unwillingness to communicate. Burgoon (1976) conceptualized unwillingness to communicate as a communication construct that represents "a chronic tendency to avoid and/or devalue oral communication" (p. 60). Unwillingness to communicate has been linked to anomie and alienation, introversion, low self-esteem, high communication apprehension, and reticence (Burgoon, 1976). It has two dimensions: (a) reward, which includes distrust, perceived isolation, evaluations of the utility of communication, and an individual's perceptions of the value of his or her communication to others; and (b) approach-avoidance, which includes anxiety, introversion, and amount of participation in various communication contexts (Burgoon, 1976). Unwillingness to communicate has been applied to mass media research to help explain differences in media use (e.g., Armstrong & Rubin, 1989) and CMC (Papacharissi & Rubin, 2000). Those who are more apprehensive about face-to-face communication and find their offline life communication with friends and family less rewarding could perhaps feel more confident when communicating through their personal home page, which is why measuring unwillingness to communicate should help explain personal home page use. Contextual age, unwillingness to communicate, and several demographic factors have been linked to Internet use before. These factors should help us understand people's motives for creating personal home pages. Therefore, the second research question is:

RQ2: How do reasons for hosting personal home pages relate to social and psychological antecedent factors and demographics?

Personal Home Page Characteristics

Previous research on Web pages (Dominick, 1999; Smith, 1998) has demonstrated how individuals use personal home pages to display their interests and some aspect of their personality online. If personal home pages present a form of encoding one's personality and displaying it online, then certain Web page capabilities and design elements could be used to reflect personality traits online. This leads to the final research question addressed in this study:

RQ3: How do personal home page characteristics relate to motives for creating the home pages and social, psychological, and demographic factors?

Method

Sample and Procedures

For the purposes of this study, personal pages were randomly sampled from the following Web page providers: Yahoo! GeoCities, America On Line (AOL) Hometown, Microsoft Network (MSN) Home Pages, and EarthLink. There is no existing directory of personal home pages, so I relied on these four popular personal Web page sites to draw as comprehensive a list as possible. All offer Web publishing tools and help guides that are accessible to new users for free in exchange for some personal information or advertising displays. All companies are concerned with establishing a safe and welcoming community that resembles real-life communities, although they take varying approaches in achieving this goal. These companies frequently use real-life metaphors, such as "neighborhoods," "streets," "blocks," and "suburbs," to create a virtual space that resembles real-life communities and helps members feel at home. A personal Web page was defined as one sustained by an individual for non-commercial and non-professional purposes (Dominick, 1999). Pages clearly authored by children and adolescents were excluded. Web sites that contained a résumé and made mention of the owner's professional qualifications were included as long as the site was hosted under the respondent's personal Web space and was not hosted or affiliated with a commercial and professional organization. This decision was made because professional and personal interests sometimes overlapped or were combined on the same Web site.

The research design of this study involved an online survey of Web page authors and a content analysis of respondents' Web sites. For the online survey, I obtained a random sample of 1,000 potential respondents (250 from each provider) from the publicly available member directories of personal Web page providers. Upon visiting pages randomly selected, I obtained the e-mail address of the individual host and e-mailed the host explaining the purpose of my study and asking for his or her cooperation. Out of the 1,000 potential respondents queried, 196 completed the survey following the first e-mail.¹ Excluding 126 inactive addresses, this yielded a response rate of 22%. One follow-up e-mail was attempted, which increased the response rate to 30%, yielding a total of 260 responses.

The low response rate may be explained by the fact that some Web page hosts created a page at some point but were no longer as involved with their pages. The growing use of spam has made Internet users wary of mass e-mailings, which is why additional follow up e-mails were not expected to increase the response rate significantly and were not attempted. Moreover, this study also requested some demographic information (e.g., income, gender, education level), which may have alienated some users. Even though mail surveys encounter similar problems (Babbie,

1995), e-mail surveys appear even more suspicious to the public because credibility can easily be manipulated or fabricated online.

Respondents were almost evenly divided by gender (47% female). Most respondents (36%) were in their late twenties or thirties, with 30% in the 41-55 group and 25% between 18 and 25 years old. Some respondents (6%) were between 56 and 65 years old, and fewer were over 65 (3%). Modal household income ranged between \$26,000 and \$55,000. The majority (58%) of the respondents had some college education or a college degree. For 17% of the respondents, high school was the highest level of education attained, while the remaining quarter of respondents had some graduate school education or a graduate school degree. The overwhelming majority of respondents were Caucasian (77%), with 7% Asian American, 4% African American, 4% Hispanic, 1% Native American, 2% multi-ethnic, and 6% affiliated with other origins.

Some additional information on the work habits and medium-use patterns of respondents was collected. Respondents' hours worked were distributed bimodally; they either did not work for pay or worked more than 40 hours a week. Overall, these respondents reported a mean of 18 hours (median of 14 hours, mode of 10 hours) spent weekly online, with a standard deviation of 17 hours. On average, respondents spent approximately 9 hours maintaining and updating their page every month ($SD = 16$ hours), ranging from zero to 130 hours per month. The average number of years hosting a personal home page was two, with a standard deviation of a year and a half, and ranging from a month to 10 years. The average experience with the Internet was 4.5 years, with a standard deviation of almost 3 years, and a range of 3 months to 25 years. The mean for years of computer use was 11.5 years ($SD = 7$ years), and values ranged from a minimum of 10 months to a maximum of 38 years. Certain cases with outlier values were excluded from subsequent statistical analysis, since they may have reflected inaccurate estimates of use and thus affected the reliability and validity of the statistical proceedings. The number of cases excluded per variable differed, but overall did not exceed a maximum of eight cases.

Measurement

Personal home page motives. To construct a personal home page motives index, interpersonal, media, and Internet motives were combined with motives produced from an open-ended pilot survey previously conducted. Items were adapted to fit the context of personal home page use, totaling 7 a priori categories: entertainment, information, social interaction, self-expression, passing time, professional advancement, and new trend. Each category included three items, and all categories totaled a 21-item, Likert-type index, with response options ranging from *exactly* (5) to *not at all* (1) "like my own reason for having a personal home page." A principal-components factor analysis was used to extract and interpret possible factors because several of these items were new, had not been used together before, and/or had not been previously used in this context. These results are summarized in response to RQ1.

The first set of results relates to *contextual age*. Rubin and Rubin's (1982) Contextual Age Scale was used to assess life position for this sample. This scale consists of six dimensions: physical health, social activity, interpersonal interaction, economic security, life satisfaction, and mobility. Each dimension is represented by five statements, which were reduced to three to attain brevity and a higher response rate, but may have produced lower reliability. Respondents indicated their level of agreement with these statements on a 5-point Likert-type scale. Responses to the items of the subscales were summed and averaged to obtain an individual score for each dimension. The mean score for the entire scale was 3.48 ($SD = 0.52$, Cronbach $\alpha = .81$). For the separate dimensions used in further data analysis, the mean scores follow: Physical health ($M = 3.53$, $SD = 0.82$, Cronbach $\alpha = .64$), interpersonal interaction ($M = 3.79$, $SD = 0.88$, Cronbach $\alpha = .62$), mobility ($M = 3.56$, $SD = 0.92$, Cronbach $\alpha = .51$), life satisfaction ($M = 3.42$, $SD = 0.77$, Cronbach $\alpha = .65$), social activity ($M = 3.20$, $SD = 0.91$, Cronbach $\alpha = .54$), and economic security ($M = 3.14$, $SD = 0.90$, Cronbach $\alpha = .75$).

The second set of results relates to *unwillingness to communicate*. Burgoon's (1976) Unwillingness-to-Communicate Scale was used to measure this construct. It is a 20-item scale that contains two dimensions: Approach-Avoidance (UC-AA) and Reward (UC-RW). The scale was adapted to five points from the 7-point Likert original version. This scale was also reduced to 10 items, in order to obtain a shorter and friendlier questionnaire. Responses for the several items of each dimension were summed and averaged for data analysis. High UC-AA scores meant that a respondent was fearful of interpersonal encounters, whereas high UC-Reward scores implied that a respondent felt valued by his or her family and friends. The mean of the entire scale was 3.03 ($SD = 0.38$). The mean for the UC-AA dimension was 2.34 ($SD = 0.72$) and 3.73 ($SD = 0.60$) for the UC-RW dimension. These scores indicated that the majority of respondents were not apprehensive of face-to-face communication and that they found communication with friends and family to be rewarding. The present study reported a coefficient alpha of .78 for the UC-AA dimension and .66 for the UC-RW dimension.

The third set of results relates to *Web page characteristics*. Following the collection of survey responses, a list of respondents' home pages was assembled. This study examined and coded respondents' entire personal Web sites, using two coders. Both coders were employed as computer consultants, and were experienced computer and Internet users, which was required in order to correctly identify and classify Web design elements. The coders possessed extensive Web publishing knowledge and spent considerable time browsing through the online directories to familiarize themselves with templates and other available Web publishing tools. Upon visiting the page, the coders marked the URL and the page title of the index page. The mean number of pages making up a Web site was 7, with a standard deviation of 8 pages and intercoder reliability at .97.² The site was classified into categories, assembled from previous research and preliminary browsing of personal Web sites. Most pages (33.8%) focused on the authors' general interests, and several (27.7%) provided a

brief, single-page introduction of the author. Of the pages, 12.8% were family-oriented pages, and 11.6% served as a creative outlet for their authors, displaying literary work or other artistic pursuits. The remaining were either profession (6.2%), support-group (4.1%), fan oriented (1.7%), or devoted to the expression of personal views (2.1%). Intercoder reliability for this item was .97.

Coders also recorded the number of feedback mechanisms hosts posted on their pages. The most popular form of feedback was e-mail (featured on 220 pages), followed by counters that marked how many times the page had been visited (108), guestbooks that displayed comments and signatures of visitors (99), instant messaging or chat capabilities (30), subscription to a listserv (12), and a contact form, usually in the form of a mini-survey (3). Fewer members used buttons that indicated whether they were online/offline at the time, message boards, discussion boards, trivia games, and more extensive surveys. Forty-seven pages out of those coded belonged to a Web ring, which is a collection of pages owned by different people sharing a common theme and forming a small community; upon entering a page that is part of a Web ring the visitor is offered the option to browse through the pages of other members. These items were clearly identified and displayed, which led to complete coder agreement on all feedback tools and Web ring membership. The mean number of links listed on Web sites was 27 ($SD = 35$), with intercoder reliability at .89. Most links were directly related to the content of the page, while entertainment (music, reading, movies) and Web authoring resource links were also frequently encountered.

Several items were used to measure the vividness and interactivity of home pages, relying on Steuer's (1992) explication of these two key components of online environments. Because these two concepts capture key elements of virtual design, they were useful in understanding how Web authors employed virtual tools for self-presentation. Consequently, vividness was operationalized as the degree to which the home page presented a sensorially rich environment. The vividness items were phrased in a 5-point semantic differential form and coders were asked to record the amount of text (ranging from 1, "little text," to 5, "just text," .89 reliability), the degree to which the page attempted to create a graphical user interface (GUI) between the host and the user (ranging from 1, "not GUI oriented," to 5, "very GUI oriented," .94 reliability), and the presence of graphics (ranging from 1, "no graphics," to 5, "many/wide variety of graphics," .93 reliability). A highly vivid Web site could include an entry page, several graphics throughout the Web site pages, perhaps some animation, and some text, frequently organized in categories or different pages, so that the page would present more of a graphical user interface. A Web site low in vividness usually consisted of a single page, and was mostly textual.

Interactivity was operationalized as the degree to which the page could be manipulated but also as the degree to which the host of the page invited interaction with visitors. Therefore, four items were used to tap into interactivity, using a 5-point semantic differential scale. The coders recorded the degree to which the host directly addressed visitors (ranging from 1, "no address," to 5, "direct address," .94 reliability).

ity), the degree to which the host solicited feedback from visitors (ranging from 1, "no feedback," to 5, "various different forms of feedback," .94 reliability), whether the host just listed interests or used a more narrative structure to present interests (it was assumed that the narrative structure would engage the user more than a dry list of links, with a range of 1, "list," to 5, "narrative," reliability at .94); and whether the content of the page could be manipulated, allowing the user to select among the different offerings of the site, or even interact with it and its host (ranging from 1, "content not manipulated at all," to 5, "content easily manipulated," .96 reliability). A typical highly interactive Web site included surveys or contact forms, provided e-mail and instant messaging author information, and adopted a narrative structure through which the author directly addressed the audience, introduced the Web site and him or herself, explained the purpose of the Web site, and described its contents. A page low in interactivity was usually less inviting, contained fewer feedback mechanisms, and consisted of a list of interests or links for the author.

Innovation and sophistication were also measured by single items on a 5-point scale. Innovation was defined as the degree to which a person presented a page that diverted from the standard templates and tools provided by the Web page service. This did not pertain to the sophistication of the code or the smoothness of the page, because a page can be rough but still reflect an effort to move away from templates. Sophistication was measured by recording how advanced or complex the code of the page was. Coders looked through templates, tools provided by Web page services, and the HTML source code so as to make valid and reliable assessments. General Web authoring knowledge helped the coders determine how sophisticated a page truly was. Intercoder reliability for innovation reached .94 and for sophistication .95. Finally, the coders noted the amount of personal information provided by the host, on a 5-point scale, ranging from 1, "none," to 5, "a lot," with intercoder agreement at .93. A second item targeted the same concept, and asked the coders to record how well they thought they knew the person, having read their page (ranging from 1, "hardly know this person at all," to 5, "know this person well," reliability at .93).

Because the Likert-type items had not been previously used and could overlap, I conducted a factor analysis (principal components with varimax rotation, using eigenvalue of 1, 60/40 loading criterion, and minimum of two items per factor) on all of the above listed items to see whether similarities would group them into factors. The factor analysis yielded three primary factors. The first factor was a combination of innovation, graphics, graphical interface, sophistication, and content manipulation items, which I termed creativity ($M = 2.55$, $SD = 1.08$, Cronbach $\alpha = .94$). The second factor contained the two items that tapped into the amount of personal information displayed on the page, and was therefore referred to as personal information ($M = 2.78$, $SD = 1.03$, Cronbach $\alpha = .98$). The third factor combined three items on the use of text, direct address, and a list/narrative structure, and identified as expressiveness ($M = 3.20$, $SD = 0.97$, Cronbach $\alpha = .80$). Relationships between Web page characteristics, motives, and antecedent factors are reported in response to RQ3.

Results

RQ1: Personal Home Page Motives

The first research question concerned identifying personal home page motives. The factor solution yielded six interpretable factors: passing time, entertainment, information, self-expression, professional advancement, and communication with friends and family. The first factor, *passing time* ($M = 2.00$, $SD = 0.83$, Cronbach $\alpha = .82$), included all three items of the a priori passing time category, and two items from the category of new trend. Because all of these items revealed a passive orientation towards a new medium, I referred to this factor as passing time. The second and third factors, *entertainment* ($M = 3.83$, $SD = 0.78$, Cronbach $\alpha = .63$) and *information* ($M = 4.08$, $SD = 0.87$, Cronbach $\alpha = .78$), contained all three items of their respective a priori categories. *Self-expression* ($M = 2.76$, $SD = 1.08$, Cronbach $\alpha = .83$) contained only two items from the a priori self-expression category, which is why it was labeled self-expression. *Professional advancement* also contained only two items from its respective a priori category ($M = 1.75$, $SD = 1.12$, Cronbach $\alpha = .87$). Finally, *communication with friends and family* contained two items from the a priori category of social interaction that had to do with keeping in touch with friends and family ($M = 2.60$, $SD = 1.35$, Cronbach $\alpha = .91$). The factor analysis results are presented in Table 1.

The motives with the highest means for this sample were information and entertainment, revealing that the most popular uses of a new medium were still fairly traditional. Self-expression and communication with friends and family were moderately salient motives, too, thus introducing more novel approaches to this medium. Professional advancement and passing time were not as salient for most respondents.

RQ2: Motives, Unwillingness to Communicate, and Contextual Age

The second research question dealt with the relationship between home page motives and host characteristics. Moderate or low but statistically significant Spearman correlations were found between approach-avoidance (referred to as UC-Avoidance, because higher scores reveal avoidance of interpersonal communication), reward (UC-Reward), economic security, mobility, physical health, interpersonal interaction, social activity, life satisfaction and motives. The highest correlations were noted between UC-Avoidance and information ($r = -.21$, $p \leq .01$), interpersonal interaction and passing time ($r = -.26$, $p \leq .01$), mobility and passing time ($r = -.23$, $p \leq .01$), and life satisfaction and passing time ($r = -.22$, $p \leq .01$). This suggested that those apprehensive about face-to-face communication were less likely to author pages for informational purposes, whereas those who were less mobile, less satisfied with their lives, and enjoyed a lower level of interpersonal interaction were more likely to host home pages as a pastime.

Table 1
Factor Analysis Results for Personal Home Page Motives

Personal Home Page Items	Personal Home Page Motive Factors					
	1	2	3	4	5	6
"I host my personal Web site . . ."						
Factor 1: Passing time						
Because it passes the time away						
when bored	.80	.23	-.14	.00	-.00	.00
When I have nothing better to do	.79	.13	-.19	.00	-.11	.00
Because everybody else is doing it	.68	-.00	.17	.13	.17	.14
Because it is the thing to do	.69	.00	.23	.14	.27	.14
To occupy my time	.65	.38	-.00	.00	-.00	.00
Factor 2: Entertainment						
Because it's entertaining	.25	.74	-.11	-.00	.00	.00
Because it is fun to try out new						
things like this	.13	.69	.00	.11	.00	.00
Because it's enjoyable	-.12	.63	.26	.00	-.11	.17
Factor 3: Information						
To provide information	-.00	.00	.88	-.00	-.00	.00
To share information that may be						
of use to others	.00	.00	.85	-.13	.00	.00
To present information on my						
special interests	-.00	.13	.69	.24	-.11	-.24
Factor 4: Self expression						
To tell others a little bit about						
myself	.13	.00	-.00	.86	.00	.16
To provide personal information						
about myself	.21	-.00	-.12	.77	.18	.28
Factor 5: Professional advancement						
To put my professional resume on						
the Web	-.00	-.00	-.00	.15	.92	.00
To help get me a job	.12	.00	-.00	.00	.91	.00
Factor 6: Communication with friends						
and family						
To communicate with distant						
friends	.14	.14	-.00	.18	.00	.89
To keep in touch with friends and						
family	.00	.19	.00	.28	.00	.86

Note: A principal component analysis, with a varimax rotation, eigenvalues of 1 or higher, and a 60/40 criterion were used for the present factor solution. The retained factors explained 68.04% of the total variance after varimax rotation. The first factor (passing time) had an eigenvalue of 5.10 and explained 15.43% of the variance, the second factor (entertainment) of 2.54 and accounted for 12.41% of the variance, the third factor (information) of 2.22 and explained 11.23% of the variance, the fourth factor (self expression) of 1.7 and 10.50% of the variance, the fifth factor (professional advancement) 1.46 and 9.40% of the variance, and the sixth factor had an eigenvalue of 1.23 and explained 9.10% of the total variance.

A canonical correlation was conducted between home page motives (set 1) and the dimensions of contextual age and unwillingness to communicate (set 2) to investigate multivariate relationships. They produced three significant canonical roots. The canonical correlations results are detailed in Table 2. For root 1, the highest positive correlation in the motives set was for information ($r = .45$). Most correlations were negative, and the highest ones were noted for passing time ($r = -.65$) and professional advancement ($r = -.48$). Within set 2, high correlations were mostly positive. The highest positive correlations in this set were for UC-Reward ($r = .64$), interpersonal interaction ($r = .54$), mobility ($r = .53$), and life satisfaction ($r = .49$). The highest negative correlation was for UC-Avoidance ($r = -.63$). Across the two sets, then, those who were mobile, found interpersonal communication to be rewarding, were satisfied with their lives, and were less anxious when communicating interpersonally, authored personal home pages for information related purposes rather than passing time or professional advancement. Interpreted differently, those who did not find interpersonal communication to be rewarding and were apprehensive when communicating with others hosted a personal page to fill time or to advance in their profession.

For root 2, set 1 was dominated by the correlation of self-expression ($r = -.95$). Smaller negative correlations were noted for professional advancement ($r = .39$), communication with friends and family ($r = -.37$), and passing time ($r = .25$). In set 2, the highest correlations were all positive for interpersonal interaction ($r = .60$), life satisfaction ($r = .54$), physical health ($r = .44$), and UC-Avoidance ($r = .37$). These results indicated that those who were satisfied with their lives, who were healthy, and who enjoyed a lot of interpersonal interaction, did not author a personal home page for self-expression purposes. In addition, those who were apprehensive about communication in general also did not author a page for self-expression purposes.

For root 3, all correlations were positive within set 1. The highest correlations were noted for entertainment ($r = .69$) and communication with family and friends ($r = .69$). Within set 2, most correlations noted were also positive. The highest ones were for social activity ($r = .78$), life satisfaction ($r = .45$), physical health ($r = .39$), UC-Reward ($r = .37$), and mobility ($r = .30$). The remaining negative correlations were for UC-Avoidance ($r = -.20$) and economic security ($r = .17$). Across the two sets, those who were socially active, mobile, and also satisfied with their lives, health, and interpersonal communication, maintained personal home pages for entertainment and communication purposes.

RQ3: Predictors of Web Page Characteristics

The third research question concerned how home page author characteristics and motives influenced the look of personal home pages. In previous data analysis, Web page characteristics were reduced to three factors—creativity, personal information, and expressiveness—used in the regression analyses. Three separate hierarchical multiple regressions were conducted (see Table 3), with medium-use factors entered

Table 2
Canonical Analysis of Personal Home Page Motives and Host Characteristics

Personal Home Page Motives	Canonical Loading	Antecedents	Canonical Loading
<i>ROOT ONE</i>			
Set 1: Personal Home Page Motives		Set 2: Unwillingness to Communicate and Contextual Age	
Passing Time	-.65	UC-Reward	.64
Entertainment	-.01	UC-Avoidance	-.63
Information	.45	Physical Health	-.04
Professional Advancement	.48	Interpersonal Interaction	.54
Self Expression	.18	Mobility	.53
Communication w/ Friends and Family	-.06	Life Satisfaction	.49
		Social Activity	-.20
		Economic Security	.12
<i>Redundancy Coefficient</i>	{3.87}	<i>Redundancy Coefficient</i>	{5.36}
<i>ROOT TWO</i>			
Set 1: Personal Home Page Motives		Set 2: Unwillingness to Communicate and Contextual Age	
Passing Time	-.25	UC-Reward	.12
Entertainment	.15	UC-Avoidance	.37
Information	.07	Physical Health	.44
Professional Advancement	-.39	Interpersonal Interaction	.60
Self Expression	-.95	Mobility	.06
Communication w/ Friends and Family	.37	Life Satisfaction	.54
		Social Activity	-.12
		Economic Security	.63
<i>Redundancy Coefficient</i>	{2.04}	<i>Redundancy Coefficient</i>	{1.70}
<i>ROOT THREE</i>			
Set 1: Personal Home Page Motives		Set 2: Unwillingness to Communicate and Contextual Age	
Passing Time	.01	UC-Reward	.37
Entertainment	.69	UC-Avoidance	-.20
Information	.04	Physical Health	.39
Professional Advancement	.36	Interpersonal Interaction	.36
Self Expression	.14	Mobility	.30
Communication w/ Friends and Family	.69	Life Satisfaction	.45
		Social Activity	.78
		Economic Security	-.17
<i>Redundancy Coefficient</i>	{1.47}	<i>Redundancy Coefficient</i>	{1.38}

Note: Root 1: $R_1 = .51$, $R_1^2 = .26$, $\lambda = .55$, $F(48, 998) = 2.70$, $p \leq .001$, Root 2: $R_2 = .31$, $R_2^2 = .10$, $\lambda = .74$, $F(35, 856) = 1.83$, $p \leq .01$, Root 3: $R_3 = .28$, $R_3^2 = .08$, $\lambda = .81$, $F(35, 856) = 1.77$, $p \leq .05$.

on the first step, antecedent factors on the second, and home page motives on the third step.³ The total number of years of personal Web authoring ($\beta = .21$), years of Internet use ($\beta = .21$), and years of computer use ($\beta = .18$) were the three predictors of *creativity* in an overall significant equation. *Personal information* had two predictors, the motives of professional advancement ($\beta = -.16$), and self-expression ($\beta = .29$), in an overall statistically significant equation. When regressing homepage *expressiveness*, Social Interaction-Reward ($\beta = .19$), the motive of self-expression ($\beta = .29$), and life satisfaction ($\beta = -.24$) were the final predictors in an overall significant equation.

Discussion

This study found that the most frequently encountered reasons for hosting a personal home page were entertainment and information. Communication with friends and family and self-expression presented more novel, yet fairly popular, motives that reflected some of the unique capabilities this medium offers for communication. Respondents who used their Web pages for communication with friends and family viewed their pages primarily as extended photo albums and used them to update other family members and friends on family activities.

Grouped together, these results indicated that respondents used home pages as functional alternatives to other types of communication. Researchers have pointed out that if a channel is not available or if the interaction it provides does not effectively fulfill a need, individuals will choose a functional alternative (e.g., Rubin & Rubin, 1985). For example, several respondents used their home pages to communicate with friends and family when other channels were not accessible or not as convenient for communicating information. Responding to open-ended questions, certain respondents elaborated on how much easier it was to stay in touch with friends and family through a home page, while others raved about how their Web page helped them secure jobs or promotions. Several pointed out that compared to other entertainment and pastime options, this was much more productive and filled them with a sense of accomplishment.

Nevertheless, these results should be interpreted with caution, given the low response rate to the survey. It is possible that non-response bias led to the participation of home page authors mostly satisfied with their experience, since those less satisfied may have abandoned their pages and thus were less likely to respond to the survey. In this sense, it would be useful to compare the demographic characteristics of respondents and non-respondents in order to clarify how the results of this study may have been influenced; however, demographic information is frequently not readily available on personal home pages. Even though a few respondents indicated their gender, information about age, income, and education was rarely available—it would thus be impossible to discuss such differences without falling into additional statistical fallacies. Still, the primary characteristic distinguishing respondents from

Table 3
Hierarchical Regressions for Personal Home Page Characteristics

	Creativity		Personal Information		Expressiveness	
	beta	F	beta	F	beta	F
Step 1: Internet hours (per week)	.06	.82	.03	.14	.07	.88
Home page maintenance (hours)	.08	1.18	-.13	2.78	-.08	1.09
Personal home page host (years)	.26	10.63***	.01	.02	-.11	1.58
Years of Internet use	.17	4.31*	-.02	.05	-.07	.62
Years of computer use	-.17	4.85*	-.06	.63	.05	.40
Step 2: Internet hours (per week)	.06	.62	.06	.46	.06	.64
Home page maintenance (hours)	.09	1.65	-.12	2.43	-.07	1.05
Personal home page host (years)	.25	9.66**	.02	.05	-.12	1.96
Years of Internet use	.17	4.41*	-.03	.11	-.07	.59
Years of computer use	-.18	5.40*	-.06	.58	.10	1.46
Social Interaction-Reward	.03	.08	.03	.10	.21	4.76*
UC-Avoidance	.17	5.23*	-.11	1.78	-.19	6.01*
Physical health	.04	.33	.09	1.39	-.04	.27
Life satisfaction	.04	.19	-.03	.09	-.28	7.93**
Economic security	-.02	.06	-.02	.07	-.04	.26
Step 3: Internet hours (per week)	.04	.32	.04	.26	.06	.65
Home page maintenance (hours)	.10	1.74	-.08	1.25	-.04	.23
Personal home page host (years)	.21	6.87**	.06	.46	-.10	1.51
Years of Internet use	.21	6.21**	-.05	.39	-.08	.85
Years of computer use	-.18	5.13*	-.05	.36	.13	2.75
Social Interaction-Reward	.03	.08	-.02	.03	.19	4.04*
UC-Avoidance	.13	2.84	-.03	.18	-.12	2.36
Physical health	.02	.04	.11	2.01	-.00	.00
Life satisfaction	.04	.15	.03	.06	-.24	5.85*
Economic security	-.04	.18	-.02	.03	-.04	.17
Passing time	.01	.02	-.05	.41	-.07	.71
Entertainment	.14	3.43	.06	.62	-.04	.32
Information	-.05	.42	-.05	.47	.00	.00
Professional advancement	.06	.66	-.16	4.73*	-.08	1.13
Self expression	-.10	1.48	.29	12.23***	.29	12.00***
Communication with friends and family	-.11	1.65	.02	.05	-.10	1.51

Note: Creativity: $R = .45$, $R^2 = .20$, adj. $R^2 = .13$, $F[16, 197] = 2.83$, $p = .000$; personal information: $R = .37$, $R^2 = .14$, adj. $R^2 = .06$, $F[16, 197] = 1.76$, $p = .04$; expressiveness: $R = .42$, $R^2 = .17$, adj. $R^2 = .10$, $F[16, 197] = 2.35$, $p = .003$.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

non-respondents, based on the preliminary viewing of all personal home pages during the sampling process, was that respondents were perhaps more committed to maintaining and updating their personal homepages. All respondents who participated in the survey possessed recently updated home pages, as was evident from the page content and the automatic update indicators featured on some Web sites. This of course indicates that the study focused only on the habits of the most committed personal home page authors instead of on the average personal home page author as originally intended. Self-selection is a common problem with surveys in general; and in this particular case, the respondents' reported satisfaction with maintaining personal Web site should not be considered as representative of the entire population.

Despite these limitations, the uses of personal home pages could also be understood as part of an effort to sustain a mode of social existence. Carey's (1975) remarks on communication as a ritual can be applied to personal home pages to understand how this medium can be used to maintain certain social relations over time. The meaning of ritual communication is frequently more ambiguous and latent, and can be communicated through symbols made available by the culture (McQuail, 1994). The use of symbols is central to online communication, where traditional non-verbal cues are mostly absent. Icons and images become very important in conveying emotion, and personal home page owners select the color scheme, icons, links, and feedback mechanisms to convey a certain emotional tone. These research findings point to a desire for social ritual, which was manifested both by the direct transmission of information and the more latent attempts to adapt social rituals online through the use of personal home pages.

The relationships noted between personal home page motives, unwillingness to communicate, and contextual age highlighted interesting distinctions between uses of this medium. Specifically, in the first root of the canonical correlation, the information motive, which revealed a more instrumental orientation, was related to higher levels of mobility, life satisfaction, interpersonal interaction, UC-Reward, and lower scores of UC-Avoidance. The reverse of these attributes was related to professional advancement and passing time. In other words, to those with numerous avenues for communication, the personal home page presented an informational tool. Those with more restricted communication channels preferred to use the home page as a tool for professional advancement and as a pastime. These findings supported the use of personal home pages as functional alternatives for authors who did not perceive other communication channels to be as rewarding or available.

The results for the second root further clarified these results. Self-expression tended to be a motive for people who were not anxious while communicating interpersonally and found interpersonal interaction to be rewarding. The same respondents had lower mobility, economic security, and life satisfaction, which is why home pages presented a functional alternative for self-expression and communication with friends and family. Personal home pages are not as anonymous as other forms of net-based communication, although they do allow the author control over the

information he or she chooses to disclose and the manner in which this is done. Therefore, those apprehensive of face-to-face communication did not seem to be eager to talk about themselves online or off-line. To summarize, these results underlined the use of the personal home page as a functional alternative. The emerging pattern was that of people using the personal home page to enhance their quality of life and to augment their avenues for communication. Looking back on previous literature (e.g., Katz & Aspden, 1997, Kraut et al., 1998), these results tend to support the view that the Internet can extend our social horizons.

It should be noted that time spent online in general was negatively related to every single dimension of the contextual age scale and UC-Reward, and positively to UC-Avoidance, passing time, and entertainment uses of the medium. This indicates that those who were not satisfied with their lives, were economically insecure, socially inactive, not too healthy, not terribly mobile, did not feel valued by friends and family, did not interact interpersonally much, and were somewhat shy used their home page for entertainment and to fill the time. Those respondents also tended to use the Internet the most.

It is important, however, to focus on the activities people engage in while online instead of the number of minutes. A look at such data indicated that respondents viewed authoring personal home pages as an opportunity for additional social communication and expression. Respondent replies to the question "Has having a personal home page improved your life and how?" (an open-ended question, which was later recoded into yes/no categories) revealed that those who used the Internet the most, spent the most time maintaining their page, and had spent the most years hosting a personal home page were more likely to respond positively. Specifically, several hosts welcomed the opportunity for expression—"something modern society has often squashed," as phrased by one of my respondents with the Web name *bakerbluescreen*—while another respondent claimed that the home page "has become my journal of sorts and gives me much personal satisfaction." Future research on general Internet and personal home page uses should not simply clock time spent online but rather focus on the types of social activities pursued online to correctly assess the relationship between the Internet and social isolation.

Predictors of personal home page characteristics helped make clear how motivation and antecedent factors influenced self-presentation online. Home page creativity was primarily influenced by medium-use factors. Hosts who had been computer users for fewer years but who were more experienced Internet users and Web authors were more likely to have innovative and sophisticated pages, utilize a graphical interface, include many graphics, allow content manipulation, and employ a wide variety of feedback forms. More experienced users have the knowledge and the tools to produce something more complex and sophisticated. Maintaining such a sophisticated page requires extensive use of the Internet, which explains why these users also were more experienced Internet users. The tendency for these authors to be newer computer users could reflect their young age. Statistically significant relationships were noted between creativity and the location of the page in separate statistical

analyses reported elsewhere (Papacharissi, in press), revealing that the most creative pages were usually hosted by Geocities or under the host's own domain ($F(5, 235) = 22.50, p < .001$). This suggested that creativity was not only a function of experience, but also a result of the tools a Web page service provided for its members.

By contrast, the remaining two factors were not influenced by medium use at all, and were primarily related to motives and social and psychological characteristics. Personal information, which had to do with how personal the information posted online was and how well people felt they knew the home page author having read his or her page, had two motives as significant predictors. Self-expression was a positive predictor, and professional advancement a negative predictor, of personal information. Therefore, these results suggested that those who viewed their personal home pages as a self-expression tool posted more personal information online. At the same time, those who used their pages as a tool for professional advancement avoided posting personal information online, underlining how the home page author's sense of an audience influenced page content. This made sense since excessive personal details are not likely to draw or impress any employers and, as a result, were avoided with professional uses of the Web page.

Expressiveness referred to the degree to which hosts addressed their audience directly and employed a narrative structure when writing the home page. Life satisfaction was a negative predictor and self-expression and social interaction-reward positive predictors of expressiveness. More expressive pages, therefore, were authored by respondents less satisfied with their lives, who still found face-to-face communication to be rewarding but were more interested in using the Web page as a medium for self-expression. Perhaps the expressiveness of the page reflected the need to vent online or to speak and address others in ways that were not available off-line to the less affluent or less satisfied with their lives. This was further supported by the emergence of self-expression as a positive predictor, which revealed the need to use the page for personal expression. The emergence of social interaction-reward as a predictor confirmed that these respondents valued social communication greatly and found it to be rewarding. However, because this variable included a combination of concepts not previously used in research, these results should be interpreted with caution. In separate statistical analyses reported elsewhere, significant relationships were noted between page location and the expressiveness of the page, indicating again that the resources provided by the Web page service also influenced the look of the page ($F(5, 235) = 9.58, p < .001$). As a result, the majority of very expressive pages was found in AOL Hometown and MSN Home Pages. The tools provided by these services to less experienced users guided them to a less interactive and more textual personal home page, although ultimately it was up to the authors to decide what their pages looked like.

Personal home pages present a new and exciting area of research. The concepts studied accounted for some of the variance in Web page characteristics, but scholars could peruse the psychological literature in search of other personality characteristics that may be reflected in personal home pages. The concept of locus of control,

for example, could be helpful in understanding which people are more likely to be influenced by the design software, templates, and tips supplied by personal home page providers. Scholars could also look at Internet service and Web page space providers for factors that influence personal home page design since this study revealed very specific differences based on Web page location. In addition, sampling methods in Web-based surveys could be further fine-tuned by attempting numerous e-mail follow-ups and attempting to reach those who started a personal home page but eventually became disinterested in it. Perhaps a sample of respondents could be contacted first by phone in order to be able to inquire about reasons of dissatisfaction with personal home pages, establish some initial contact, and obtain a higher response rate. A follow-up study could attempt a comprehensive content analysis of the home page characteristics of both respondents and non-respondents, in order to conduct a thorough comparison of the two groups and address non-response bias issues within communication research in general.

New forms of community that emerge among personal Web page authors are also worthy of additional research. Keeping in mind the significance of community tropes for their members, it would be interesting to study how recent changes in the GeoCities format (following the merger with Yahoo!) have affected user communities. Future studies could look at how growing convergence in portal formats influences individual users and communities. One such consequence for communities may be that several members create and/or join Web rings, which are collections of Web pages of friends or people with similar interests and were fairly prevalent in this study.

Finally, it is important that we adequately distinguish between individual Internet uses and motivation before condemning the medium for promoting social isolation. Hours spent online are not necessarily hours spent in isolation away from other social beings. It is easy to become trapped by a false real/virtual world dichotomy, which may influence our interpretation of statistical findings. In this study, the overall use of personal home pages was mitigated by individual traits and dispositions, thus highlighting the importance of individual differences in the use of new media. In the future, researchers should continue to focus on such differences to obtain a comprehensive understanding of new media technologies.

Notes

¹ 201 respondents actually completed the survey. Five of these were dropped because they indicated they were below 18 years of age in response to demographic questions. This study did not focus on, nor was permitted to include, respondents below that age.

² Reliability for all content analysis variables was calculated using the Perreault and Leigh (1989) reliability index: $I_r = \{[(F_o/N) \cdot (1/k)]/[k/(k-1)]\}^{0.5}$, for $F_o/n > 1/k$, where F_o is the observed frequency of agreement between coders, N is the total number of judgments, and k is the number of categories. This index accounts for coder chance agreement, the number of categories used, and is sensitive to coding weaknesses. Reliability scores can range from 0 to 1, with higher scores indicating greater intercoder agreement.

³ Antecedent factors included contextual age dimensions and the Reward and Avoidance dimensions of Unwillingness to Communicate. Following a reviewer's suggestions, the mobility dimension of contextual age was not included in the regression analysis because of insufficient reliability. Two other contextual age dimensions, interpersonal interaction and social activity, also had insufficient reliability and were combined with UC-Reward to produce a 9-item scale that measured how rewarding and satisfying individuals perceived face-to-face communication with others to be ($M = 3.67$, $SD = .54$, Cronbach $\alpha = .74$). This scale included all UC-Reward items, the 3 interpersonal interaction items and only one social activity statement. Only statements that were conceptually related and enhanced the reliability of the scale were used. This combination of items is referred to as Social Interaction-Reward. These statements were combined because together they evaluated the degree to which an individual perceived face-to-face social interactions to be rewarding. This change enhanced the values and significance of certain predictors and improved the overall significance of all three regression equations. All predictors retained their significance, and Social Interaction-Reward emerged as a predictor of expressiveness (a finding interpreted with caution, given the exploratory nature of this combination).

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