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Uses and Gratifications of the Internet

presented by

Tamar Rachel Charney

has been accepted towards fulfillment
of the requirements for

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Bradley Greenberg
Major professor

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USES AND GRATIFICATIONS OF THE INTERNET

By

Tamar Rachel Charney

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Telecommunications

1996

ABSTRACT

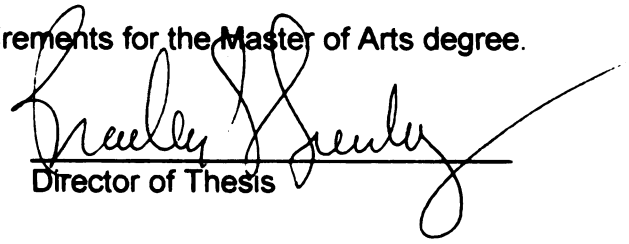
USES AND GRATIFICATIONS OF THE INTERNET

By

Tamar R. Charney

There is a popular perception that since the Internet ('Net) and on-line services are so-called "information services" they are used for information seeking. But research on computers and e-mail raise the suspicion that Internet use may in fact be motivated by a desire for entertainment. This study examines why people use the Internet from a uses-and-gratifications perspective. While using the 'Internet to meet a need for entertainment-diversion was the most frequent use of the 'Net, using it to keep informed and for communication explained nearly 36% of the variance in time spent using the Internet. Additionally, the phenomena known as '*netsurfing* was examined. Reasons for surfing the Internet were to find something, for fun, to pass time, and to see what is going on.

Accepted by the faculty of the Department of Telecommunication, College of Communication Arts and Sciences, Michigan State University, in partial fulfillment of the requirements for the Master of Arts degree.



Director of Thesis

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Introduction

STUDY RATIONALE

What motivates people to use the Internet? Knowing what needs people are looking to fulfill and what types of activities they enjoy pursuing on-line will enable companies, media producers, policy makers, and media effects researchers to better understand how to deal with this emerging media form. Understanding how people use new technologies can help researchers predict the impact the technology will have on society. As Deborah Cowles points out the "use to which a medium is put helps determine its impact." Thus it is important that energies be directed "to the study of interactive media because interactive media can be put to many different uses" (Cowles, 1989).

If the Internet is being used for entertainment purposes, the way people allocate their time to other entertainment sources may shift. If on the other hand the Internet is used mostly for research and information seeking it is unlikely that the technology will achieve the degree of adoption as would a technology used for entertainment and other mass appeal purposes. As Williams, Phillips and Lum noted, "we are seeing modifications in the choice environment. Some of these may be short lived...and others may change the media environment forever (Williams, Phillips, & Lum, 1985).

Knowledge about why people use the Internet will be helpful in business forecasting and decision making. Should companies be developing on-line video applications and games or reference and research tools or communication applications? Since "the proliferation of new communication technologies may affect the structure of communication in society" (Williams, Phillips, & Lum, 1985), knowledge about the amount of use and type of use is important when policy makers and business leaders make decisions about the design and architecture of the "information superhighway." Currently there is a lot of speculation about Internet use by the business, academic, and governmental sectors. Business leaders wants to know where to invest, the government wants to know how to regulate (or not), and the academicians want to know how on-line services are going to affect society, but there is a paucity of research being done to explain and categorize what people are actually doing on-line and why.

Chapter 1

DEFINING THE INTERNET

While there is debate over how to define the units of analysis in studying what is commonly referred to as "the 'Net", Wellman and Gulia proposed a definition that concurs with common usage in the mass media. Their study focused on "the Internet, dialogue or chat lines (ie: Internet Relay Chat), e-mail, newsgroups, bulletin board systems, commercial networks such as America On-Line or Prodigy, MUD's, MOO's, etc....we refer to the sum of all these systems as the 'Internet' or simply, 'the Net'" (Wellman & Gulia, 1995). John December points out "researchers studying communication on an on-line service (for example Prodigy) must be careful to realize that they are not studying Internet communication" (December, 1996). Wellman and Gulia acknowledge that while "some of these systems are strictly speaking not part of the Internet, they are rapidly becoming connected to it. Indeed the Net has never been a single entity. Rather, it is a 'network of networks'" (Wellman & Gulia, 1995). However, despite its shortcomings Wellman and Gulia's broad definition seems to best describe the Internet from a user's perspective without drawing distinctions based on protocol and technological factors that are transparent when using the medium with current software. For the purposes of this discussion and study, the Internet ('Net) will be defined as what is technically

the Internet, as well as, the World Wide Web, Inter Relay Chat (IRC) functions, newsgroups, commercial networks such as America On-Line or Prodigy, MUD's, MOO's, gopher, and the other activities possible on the Network of Networks.

Chapter 2

LITERATURE REVIEW

Unlike conventional media "the computer is an object without a fixed or predetermined function...depending on how the computer is used it may take the form of a work tool, a calculator, a toy" etc. (Caron et al., 1989). The same can be said for the Internet: it can be used for a variety of purposes - research, correspondence, games, shopping, etc. If the computer and by extension the Internet really have no inherent set of functions, how do people decide how to use it? Unless forced, people would have to be engaging in an active decision to use the medium for a specific purpose or purposes that the user specifies based on an internal desire, need, or goal. Currently, while there is no formal explanation of why and how someone decides that they are going to use the Internet, it would appear that uses-and-gratifications might be an appropriate framework from which to examine 'Net use since the theory accepts the idea of an active audience. Newhagen argues in a Journal of Communication Symposium that "the perspective seems to hold some prospect for understanding the Internet because it addresses the problem of its mutability...the Internet offers the user a broad range of communication opportunities...[and] uses-and-gratifications offers a vehicle to lay out a taxonomy of just what goes on in cyberspace" (Newhagen, 1996). Elsewhere in the same issue of the Journal of Communication it is argued that the comprehensive nature of uses-and- gratifications makes the theory useful when studying the 'Net

because the 'Net is "a media environment where [there are] not only home and business applications, but also work and play functions" (Morris & Ogan, 1996). Uses-and -gratifications, therefore, is likely to be helpful when trying to understand the 'Net because it can describe the range of activities possible on the 'Net.

Uses-and-gratifications: The Theory

The uses-and-gratifications approach to media studies is described by Katz, Blumler, and Gurevitch (1974) as one that looks at "(1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) the mass media or other sources, which lead to (5) differing patterns of media exposure..., resulting in (6) need gratifications and (7) other consequences." Thus the social and psychological characteristics of people influence their motivations for using media sources. While the model posits a connection from the origins of needs to the effects of media in that "the strength of needs (gratifications sought) will ultimately determine the impact of any selected communication channel (Lometti et al, 1977)," this connection is rarely investigated. Lichtenstein and Rosenfeld (1984) explain that since people "choose their media experiences according to the particular gratifications,...research has focused primarily on the exploration of audiences' decision making processes."

Currently uses-and-gratifications seems to be most useful for describing the various reasons or motivations for choosing one medium over another one. Lichtenstein and Rosenfeld (1984) found that "the decision to utilize mass communications channels involves a two part process. The first part involves the acquisition of normative

expectations about gratifications from different media. The second part concerns individualistic decisions about how to seek gratifications." People use their perception of the ability of a medium or channel to fulfill them in making a decision to use that medium. "Media selection is goal-directed, purposive, and motivated...in order to satisfy felt needs or desires" (Rubin, 1994). Unfortunately there is no one master list of the gratifications obtained from media use, instead there are numerous classification systems and categories. Examples of gratifications uncovered in past research on conventional media include a need for factual information, substitute companionship, social validation, relaxation, behavioral guidance, excitement, companionship and affective guidance (Lometti et al, 1977). These and other gratifications have been used in examining which media outlets people seek for what purpose (See Table 1).

In a study of television use among children six uses of television emerged - as a habit, for arousal, for companionship, to relax, to forget, and to pass time (Greenberg, 1974). A recent study of the telephone resulted in four gratifications - sociability, entertainment, acquisition, and time management (O'Keefe & Sulanowski, 1995). Eight utility factors emerged in a study of the uses-and-gratifications of the VCR - library storage, music videos, exercise tapes, movie rental, child viewing, time-shifting, socializing, and critical viewing (Rubin, 1987). Interestingly the entertainment and information gratifications often seen as the result of uses-and-gratifications studies did not emerge in Rubin's study. The item "it is entertaining" loaded with library storage. There were no items that reflected informational uses.

Instead, many of the motivations for use identified by Rubin are specific to VCR's unlike the more general gratifications seen in many uses-and-gratifications studies. The uses-and-gratifications model has been used extensively to look at television use, as well as other conventional media outlets, it has also been applied to newer technologies such as VCR's (Rubin, 1987). However, as of yet, little research has examined the uses-and-gratifications of computer based new media such as the Internet.

Previous Studies

Deborah Cowles (1989) identified a "pivotal, unanswered question" which is whether Videotext is used by people "to satisfy the same needs they have been thought to satisfy with the more traditional...media." She then examined the use of interactive media in the context of financial planning services from a uses-and-gratifications perspective. While her study suggests that the uses-and-gratifications approach holds promise for explaining interactive media use, her study was not an investigation of "media gratification theory as it relates to interactive media" since she was examining the utility and consumer perceptions of interactive media in the context of seeking financial information.

Elizabeth Perse and John Courtright (1993), in a study conducted in 1988 prior to the advent of the World Wide Web*, compared how twelve different communication channels including television, VCR's, cable television, movies, conversation,

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* The Web was first introduced in 1991. 1993 is considered the year that it began to gain prominence (World Wide Web Consortium, 1995 & Kirsner, 1996).

Table 1 - Uses-and-Gratifications from Past Studies

Table 1 - Uses-and-Gratifications from Past Studies

Theme*	**Gratifications**	**Study**	**Medium**
Arousal	Arousal	Greenberg (1974)	TV
	Arousal	Rubin (1981)	TV
Divert	Habit	Greenberg (1974)	TV
	Pass Time/Habit	Rubin (1981)	TV
	Pass Time	Greenberg (1974)	TV
	To Kill Time	Lichtenstein & Rosenfeld (1984)	Commercial TV, radio, magazines
	Diversion	McQuail, Blumler, & Brown (1972)	TV
	Forget	Greenberg (1974)	TV
	Escape	Rubin (1981)	TV
	To get away from usual cares and problems	Lichtenstein & Rosenfeld (1984)	film, recorded music, friends, books, radio
Entertainment	Entertainment	O'Keefe and Sulanowski (1995)	Telephone
	Entertainment	Rubin (1981)	TV
	To be entertained	Lichtenstein & Rosenfeld (1984)	recorded music, film, radio
Relationships	Sociability	O'Keefe and Sulanowski (1995)	Telephone
	Social	Rubin (1981)	TV
	To Overcome loneliness	Lichtenstein & Rosenfeld (1984)	Friends, recorded music, radio
	Personal Relationships	McQuail, Blumler, & Brown (1972)	TV
	Companionship	Rubin (1981) Greenberg (1974)	TV

Table 1 (cont'd).

Theme*	Gratifications	Study	Medium
Information	Surveillance	McQuail, Blumler, & Brown (1972)	TV
	Information	Rubin (1981)	TV
	Learning	Greenberg (1974)	TV
	To keep up with the government	Lichtenstein & Rosenfeld (1984)	Newspapers, magazines, TV
	To Obtain information about daily life	Lichtenstein & Rosenfeld (1984)	Newspapers, friends, magazines, books
	To get to know the quality of our leaders	Lichtenstein & Rosenfeld (1984)	Newspapers, Public TV, magazines
Relax	To release tension	Lichtenstein & Rosenfeld (1984)	recorded music, radio, friends, film
	Relax	Greenberg (1974)	TV
	Relaxation	Rubin (1981)	TV
Self	To learn about myself	Lichtenstein & Rosenfeld (1984)	Books, friends
	Personal Identity	McQuail, Blumler, & Brown (1972)	TV
Misc	To feel I'm involved in important events	Lichtenstein & Rosenfeld (1984)	newspapers, books, public TV, recorded music
	Acquisition	O'Keefe and Sulanowski (1995)	Telephone
	Program content	Rubin (1981)	TV
	Time Management	O'Keefe and Sulanowski (1995)	Telephone

* Gratifications listed together in theme groups are not necessarily interchangeable. Clearly some of the studies have shown a difference in items that are listed together in this table. Grouping by theme, however illustrates the range and breadth of gratifications among certain categories.

newspapers, telephones, music, books, magazines, radio, and computers fill needs. In contrast to the other media studied, Perse and Courtright found computer based communication activities to be ranked lower at fulfilling most all needs. However, since that study was conducted two changes have occurred with computers that might alter the results of the study were it conducted today - personal computers continue to be used "to an increasing extent and for more varied purposes in leisure and work situations" (Steinfield, Dutton, & Kovaric, 1989) and the Internet and World Wide Web have gained prominence.

Estimates indicate that between 29 million (Hoffman, Kalsbeek, & Novak, 1996) and 37 million people in the United States and Canada use their computers to access the Internet and on-line services (Nielsen Media Research, 1995). These people spend considerable amounts of time doing so. Specifically the Nielsen study found that use of the Internet and on-line services averages 5.5 hours per week which is equivalent "to playback of rented videocassettes" (Nielsen Media Research, 1995). Pitkow and Kehoe (1995) found that 78% of Internet users use the World Wide Web daily. Additionally, anecdotes abound in the media of people addicted to the 'Net, of workers calling in sick so they can surf the Internet (Ritter, 1996), and of children spending hours on the Internet at the expense of homework (McCartney, 1994). Users must find the computer and the Internet more effective than other media in fulfilling certain needs; otherwise they would not devote large amounts of time to the use of the medium nor would World Wide Web users be reporting that they are using the web instead of watching television (Pitkow & Kehoe, 1995). Thus it would

seem that such services are being selected either to fulfill needs formerly met by other media or perhaps even needs not formerly met by conventional media.

What communication needs are being filled by the Internet?

In a study of one of the early attempts at Videotext services in the United States Atwater, Heeter, and Brown (1985) asked participants in a laboratory trial of the Viewtron system to indicate the gratifications they would seek to fulfill when using Videotext. After using the Viewtron system, participants believed Videotext was most likely to fill surveillance needs and least likely to fill entertainment needs despite the fact that the system was "designed for both information retrieval and entertainment" (Atwater, Heeter, & Brown, 1985). However, the gratification options given to the participants were "based on gratifications identified in television and newspaper research" and thus the study does not reflect any new gratifications possible with Videotext.

Interestingly, while Internet services are commonly referred to as information services and while the Viewtron study found Videotext to fill information needs, terms such as "surfing the 'Net" suggest that the use of the Internet might be motivated by more than a quest for information. Ninety percent of World Wide Web users in the Nielsen study and 79% of users in the Pitkow & Kehoe study reported engaging in browsing or exploring otherwise known as "netsurfing." These results seem to suggest that Internet use might also be motivated by a need for entertainment or time passing. Looking again to computers as a guide, it is commonly thought that

computers are mainly information processing tools and educational tools. Yet, according to market research cited in the *Wall Street Journal* (1994, November 15) while computer purchasers cite information and education as the motivators for purchasing their computers, 70% of computer owners cite entertainment as the most frequent use of their computers. Given that finding, it would seem less surprising that Pitkow and Kehoe's World Wide Web User study (1985) found that 79% of respondents used the web for browsing, 63% for entertainment, and 52% for work.

Perse and Courtright's study yields some information about the possible utility of computers for satisfying communication needs: Learning needs, passing time, and diversion were found to be the top three gratifications sought when using computers. Are people seeking the same gratifications when using the Internet? It is easy to see how the ability to access information, attend virtual classes and universities, and exchange ideas with other people on-line are all ways people might meet learning needs through Internet use. On-line games, music, and videos, as well as browsing or exploring the Internet are examples of time passing, entertainment, and diversion activities that are possible with the medium. The Nielsen study and the Pitkow and Kehoe study found that common uses of the Internet include searching for information, browsing and exploring, e-mail, discussions, accessing news and magazines, and shopping. While some of these activities clearly fall into the three previously mentioned categories, other activities such as e-mail and on-line discussions could be motivated by a number of reasons. And many of the transactional activities that are possible on the 'Net such as shopping do not seem

to be easily fit into the conventional uses-and-gratifications categories.

> The literature frequently suggests the importance of the emerging contrast between technologies that are interactive versus those that are non-interactive. This contrast is particularly evident in experiences with new text services. ...Services have been designed to meet a wide variety of media needs, presumably many of which would be definable in terms of traditional uses and gratifications. On the other hand there are the gratifications associated with specific utilitarian services that are so specifically task related that general gratifications seem irrelevant (Williams, Phillips, & Lum, 1985)

such as banking and making travel reservations.

> A characteristic of some of the most used text services is that the satisfied need often reflects accomplishment of a specific task (such as booking theater tickets) than a traditional media related satisfaction (such as being entertained.) The task may have emotional dimensions as well. People may use computer ...services to meet new friends or to share ideas (Williams, Phillips, & Lum, 1985).

Wellman's research (Wellman & Gulia, 1995, Wellman et al, 1996) suggests that a large part of e-mail and Internet use is socially motivated. Wellman argues that the 'Net is a virtual community, "if the 'Net were solely a means of information exchange, then virtual communities...would mostly contain narrow, specialized relationships. However, there is evidence that information is only one of many social resources that is exchanged on the 'Net."

While there is little research into on-line service use, e-mail use has been researched fairly heavily. Within organizations a traditional assumption had been that e-mail systems were used primarily for task-related communication (Steinfield, 1986). However, studies indicate that a large portion of e-mail even within work settings is of a social nature. Rice and Steinfield (1994) found that the use of office

e-mail fell into three categories often seen in uses-and-gratifications research - entertainment, consensus/control, and surveillance. Within the cluster of entertainment related uses, office e-mail was used to "fill up free time", "take breaks from work", and "participate in entertaining events." Worded differently, e-mail was used, even in the workplace, for entertainment, for diversion, and to pass time - the three motivations for computer use from the Perse and Courtright study. Like we saw with computer use, e-mail in reality is used for entertainment purposes more than suspected.

Surfing the Media

In the Viewtron study it was noted that "the browse and tour accessing modes [of the Viewtron system] are ... suited to "pleasure reading" (Atwater, Heeter, & Brown, 1985). Clearly browsing or netsurfing involves more than information seeking. Both a pilot study conducted for this project and the Pitkoe and Novak (1995) study indicate that this activity is frequently engaged in. Unfortunately it is unclear exactly what surfing is. Is it just engaged in to pass time, is it entertaining, is it in fact a surveillance function, or is it a way of coping with the large volume of options available? "New media use has created new audience activity dimensions such as grazing, or using the remote control device to graze over many viewing options" (Lin, 1993).

Heeter suggests that channel surfing with the remote control "when a viewer does not already know what they want to watch...may be an examination of program options (generating alternatives), accompanied by a covert matching of needs with programs that fulfill them (assessing consequences), leading eventually to selection of a matched needs-program option" (Heeter, 1985). Thus is 'netsurfing merely a means of finding that which is gratifying? On the other hand, Hoffman and Novak (1994) posit that netsurfing and "time-passing" ritualistic use characterize "early interactions with hypermedia." People netsurf because they enjoy gaining mastery over the medium. They anticipate that more and more instrumental use will develop over time while frequency of engaging in browsing will decrease. While time studies should be conducted to test their assertion, if the uses-and-gratifications of on-line services parallel conventional electronic media closely, then the use of on-line services in a ritualistic manner is not likely to disappear. Another possibility suggested in the popular press is that 'netsurfing is "a procrastinators dream...[offering] us the opportunity to waste time, to wander aimlessly, to daydream about the countless other lives, the other people" also on the 'Net (Gibson, 1996).

'Net Choices

While it is unclear what motivates netsurfing, Internet content providers seem to be creating more and more applications and more and more content designed for entertainment, social, and time passing activities. Chat groups, on-line comic strips, games, interactive extensions of television programs, audio, video, and absurdities such as cameras on fish tanks and bathrooms are increasing in an environment

once characterized by databases, search and retrieval programs, and academic/military/government information. Services catering to certain segments of society such as children and the elderly focus less on information germane to these groups and more on fostering a sense of community and providing pass time activities targeted at the demographics of the user (Rigdon, 1994). Wellman (1995) argues that one of the motivators of 'Net use is the construction of a virtual community and society. The 'Net is a way of meeting people and becoming part of a community. On the other hand, Internet commerce by means of actual transactions, product information, and advertising on the Internet is also increasing. However, there remain a plethora of information and research tools available on the Internet. One can "make a case for a 'fun' or entertainment function of the telephone" (O'Keefe & Sulanowski, 1995) likewise the Internet may have an entertaining function despite the fact that, like the telephone, it started out as a means of surveillance, information gain, purchasing goods, and scheduling.

With so many different activities, types of content, and options on the 'Net how does someone decide what to do or know what to do unless they come to the Internet seeking gratifications of some sort or other based on their psychological or social conditions. People can engage in passive use of the radio or television if already on, or even turned on for no real reason. To use the Internet the user has to actively direct the service to a specific function. Accidental exposure is possible, but not as likely as accidental exposure to television or radio. Unfortunately with few real studies of Internet use one can only guess at and read in between the lines of

previous research when trying to ascertain what the motives are that lead people to use it.

Palmgreen (1984) cautions that in studying new communications technologies "researchers should not be wedded to gratification typologies that the very changes under study may have rendered incomplete, if not obsolete." Thus it may be that previous research has not yet uncovered the gratifications Internet users are seeking to fill. With many on-line services allowing users to choose aliases and 'Net activities such as Multi-User Dungeons (MUDs) encouraging users to create the identity of their choosing, the use of alternative personas and identities are common on the 'Net. Age, gender, and other elements of identity become "a property that can be reset with a line of code" (Bruckman, 1993). Could the ability to transcend race, age, gender, and mobility motivate users? Parks quotes Bruckman as noting that "cyberspace creates an 'identity workshop' in which people learn and test social skills" (Parks, 1996). Conventional media uses-and-gratifications research has not provided a category of gratifications for such activities facilitated by the interactive nature of the "Net.

Unfortunately exactly what constitutes interactivity is unclear. Rafaeli defines interactivity as "an expression of the extent that in a given series of communication exchanges and third (or later) transmission (or message) is related to the degree to which previous exchanges referred to even earlier transmissions.....[the] definition of interactivity would be one predicated on the issue of responsiveness" (Rafaeli,

1988). Heeter posits that there is not a definition per se but dimensions of interactivity such as "complexity of choice available, effort users must exert, responsiveness to the user, monitoring information use, ease of adding information, and facilitation of interpersonal communication" (Heeter, 1989). Thus if the Internet and other "new media possess attributes not possessed by the traditional media, in particular, interactivity" (Cowles, 1989), then the "consequences for audience members include greater selection, more personal control over selection, and the sense that one can be a communications source as well as a receiver... Interactivity also provides opportunities for interpersonal-like transactions between individuals or among groups of communicators" (Williams, Phillips, & Lum, 1985). However we do not know if the changes brought about by interactivity change the gratifications sought. Luckily the uses-and-gratification approach assumes that one can merely ask "individuals who use the medium...what purposes motivate specific uses of a medium or its content" (Rubin, 1987).

Research Questions

First of all this study seeks to describe the gratifications sought by Internet users. What are people doing on the Internet and what is motivating 'Net use? What accounts for the amount of time people spend on the 'Net? Of secondary importance is the question of netsurfing. Are users netsurfing? What motivates netsurfing? Finally, what predicts the gratifications sought when using the 'Net?

Chapter 3

METHODOLOGY

Data Collection

Data for this study were collected in August of 1996 through an in-class self administered survey. The questionnaire administration was supervised by the principal investigator. Respondents were a purposive sample of students in Telecommunications 100 an introductory class taught by The Department of Telecommunication at Michigan State University. All respondents had free access to the Internet through the University. A total of 200 completed questionnaires were obtained out of the 216 that were distributed. Of the 200 questionnaires 168 respondents reported that they use the 'Net.

Instrument Development

In a preliminary study, 14 students in a Physical Education class at Michigan State University and 8 members of a Detroit area office described the different activities they engaged in on-line. For each activity the respondent listed, the respondent was asked to list the main reasons or motivations for engaging in that activity. Responses were subjected to a content analysis which yielded eight categories of Internet use:

- e-mail
- chat rooms
- work & school related research

- job hunting
- travel information
- transactions (ie: obtaining or delivering products)
- netsurfing
- games or "playing"

Five dimensions of motivations for use emerged in the analysis:

- school/work necessity
- social
- entertainment
- boredom- time passing
- *exploration-novelty seeking-surveillance*

This information was used to supplement and adapt items used in previous gratifications research yielding the following dimensions:

SOCIAL
I use the 'Net to stay in touch with people I don't see very often.
I use the 'Net to get advice or support.
I use the 'Net to get information to pass on to other people.
I use the 'Net to meet new people.
I use the 'Net to find companionship.
I use the 'Net to find people like me.

ENTERTAINMENT
I use the 'Net to have fun.
I use the 'Net to feel good.
I use the 'Net to be entertained.
I use the 'Net to find excitement.
I use the 'Net to play.

ACQUISITION
I use the 'Net to get information about products or services.
I use the 'Net to learn about how to do things.
I use the 'Net to order products or services.
I use the 'Net to make reservations.
I use the 'Net to find information.
I use the 'Net to deliver information or documents to someone.

SURVEILLANCE
I use the 'Net to be informed about what is going on in the world.
I use the 'Net to get immediate knowledge of big news events.

I use the 'Net to keep up with news that isn't available elsewhere.
I use the 'Net to get information like time/weather/stock prices/sports scores .
I use the 'Net to find out about job opportunities.
I use the 'Net to get information I can trust.

PASS TIME/DIVERSION
I use the 'Net to relax.
I use the 'Net to combat boredom.
I use the 'Net to pass time.
I use the 'Net to satisfy a habit.
I use the 'Net to find new things.
I use the 'Net to avoid doing what I am supposed to.

PEER PRESSURE/STATUS
I use the 'Net to feel important.
I use the 'Net to gain status.
I use the 'Net to be cool.
I use the 'Net because I know I should.
I use the 'Net because everyone else does.

FUTURE
I use the 'Net to develop new interests.
I use the 'Net to be a part of the "information superhighway."
I use the 'Net to stay up to date for my career.
I use the 'Net because I know it will be even more important in the future.
I use the 'Net to keep learning.
I use the 'Net to keep up with technology.

IDENTITY
I use the 'Net to try out new identities.
I use the 'Net to escape who I am.
I use the 'Net to be accepted for my ideas.
I use the 'Net to experience things I can't in the real world.
I use the 'Net to live out a fantasy.

FAME
I use the 'Net to publish materials.
I use the 'Net to let people know who I am.
I use the 'Net to learn about famous people.
I use the 'Net to read home pages of other people.

AESTHETIC
I use the 'Net to look for visually interesting graphics and pages.
I use the 'Net to enjoy the sights and sounds.
I use the 'Net to look at graphics and animation

For each item respondents were asked to indicate the frequency with which they use the Internet for that reason on a 5 point scale (1=not at all, 2=rarely, 3=sometimes, 4=often, 5=very often).

The categories social, entertainment, surveillance, diversion, and many of the individual items under these headings came directly from previous uses-and-gratifications research (Lin, 1993; Dobos & Dimmick, 1988; Atwater, Heeter, & Brown, 1985; Perse & Courtright, 1993; etc.). The social category was augmented heavily by Wellman's research into the community like aspects of the 'Net (1995). The acquisition category incorporates items from a study of the uses-and-gratifications of the telephone (O'Keefe & Sulanowski, 1995) and the preliminary study. The remaining five categories - aesthetic, fame, identity, future, and peer pressure - are a combination of ideas culled from responses in the preliminary study, the Wellman article, the popular press, conversations with users and media researchers. These categories are an attempt to tap into some of the unique features and capabilities of the 'Net such as the ease of being a "publisher", the ability of the 'Net to create "an identity workshop where people can learn and test social skills" (Parks, 1996), the fashionable status of the 'Net, and the novelty of the medium.

Frustration with the 'Net

Respondents were also asked to indicate the frequency with which they found themselves experiencing various frustrations with the 'Net (scale 1-5, 1=not at all).

NET FRUSTRATIONS
I have trouble remembering how to get onto the 'Net
I get disconnected while I'm on the 'Net
I get frustrated because the 'Net is running slowly
I have trouble finding what I am looking for on the 'Net
The 'Net graphics take too long to access
I find I'm seeing the same stuff over and over
I find myself thinking that the novelty of using the 'Net is gone
I get bored using the 'Net
I get frustrated having to wait while things are downloading
I find the 'Net is over rated
I have trouble using the 'Net

Questions about computer use

Respondents were asked about their computer use. They were asked to answer yes or no to the question "do you personally own a computer at this time?" They were also asked "how many hours per week do you use a computer for fun/play?" and "how many hours per week do you use your computer for work?" The response options for these two questions were "none", "under 5 hours", "6-10 hours", "11-20 hours", "21-30 hours", "31-40 hours", and "over 40." Response options for these two questions were guided by the options used by Pitkow and Kehoe (1995).

History with the 'Net

Two questions were asked about the respondents' history with the 'Net. The question "how long have you been using the 'Net" was asked. Response options were "less than 6 months", "6-11 months", "1-3 years", "4-6 years", and "7 years or more." For the question "how did you learn to use the 'Net" respondents were asked to select one answer from the following options: junior high class, high school class, college class, extracurricular class, on my own, from a friend, from a parent or relative, from computer lab staff, at work, or other.

Questions about 'Net use

To the question "where do you most often use the 'Net" respondents where asked to select one answer from the choices "home", "school computer lab", "work", "friend's home", "relative's home", "library", "community center", "other." For each of the following, respondents were asked to circle "yes" or "no" to indicate whether they do that activity on the 'Net: research for school, research for work, browsing/surfing, learning, shopping, reading on-line news or magazines, doing work on-line, entertainment, e-mail, playing games, newsgroups/IRC, accessing general information (e.g.: time, weather, stock prices, etc.), accessing information on products.

Respondents were asked to indicate "how many hours a week do you spend on-line" by choosing from "less than one hour", "2-4 hours per week", "5-7 hours per week", "8-10 hours per week", "11-20 hours per week", and "more than 20 hours per week." For the questions "how much time do you spend 'Netsurfing each week" respondents had the options "less than 1 hour", "2-4 hours", "5-7 hours", "7-9 hours", "10 hours or more", and "don't surf." Respondents were also asked "which reason best describes why you surf or browse the 'Net." Answer choices to this question were "to find something in particular", "to pass time", "to see what's going on", "for fun", "to feel less lonely", "I feel I should", "to learn how to use the 'Net", and "don't surf."

Demographic Questions

Demographic questions included "are you male or female?", "what is your age?", "what is your class level" (response options: freshman, sophomore, junior, senior, graduate student, continuing education, not an enrolled student), and "what is your current marital status" (response options: single, domestic partnership/living with someone, married, widowed, divorced.)

Chapter 4

RESULTS

Number of respondents for each question ranged from 150 to 168. The questions with the lowest number of respondents were the questions about frustrations with the 'Net due to its position at the end of the instrument. Only the questions on frustration with the 'Net had less than 160 respondents per question (see Appendix).

Demographics

30 percent of the respondents were female (n=51) and 67 percent were male (n=112). All but one of the respondents were undergraduates. 56 were freshman, 49 were sophomores, 36 were juniors, 21 were seniors, and one respondent was a continuing education student. Mean age of the respondents was 19.7 years with respondents ranging from 17 to 38 years of age. 81% of the sample was between 18 and 21 years old. 93% were single.

Computer and 'Net Use

54% of respondents personally owned their own computer. 13% indicated they did not spend anytime doing work on a computer. 47% spent less than 5 hours a week using a computer for work, 23% spent 6-10 hours a week working at a computer, and 16% spent more than 11 hours a week using a computer for work. 8.3% said they never use a computer for fun. 61% spent less than 5 hours a week using a

computer for fun, 22% spent 6-10 hours, and 8% used the computer for fun in excess of 11 hours a week.

Most respondents had been using the Internet for less three years (27% less than 6 months, 25% 6-11 months, 41% 1-3 years, 5% more than 3 years). *Home* and *in a school computer lab* were the locations at which most respondents used the 'Net (39% home, 43% school lab, 9% work, 4% friends house) 26% of the respondents reported that they learned how to use the 'Net on their own while 22% learned from a friend, 21% learned in a class in college, and 11% learned in a high school class, 7% learned from a parent or relative, 5% learned at work, and between 1 and 2% learned in a junior high school class, an extracurricular class, or from a computer lab staff member.

Most respondents spent less than 4 hours a week using the 'Net. 38% spent less than one hour on the 'Net, 36% spent 2-4 hours, 6% spent 5-7 hours, and 11% spent in excess of 7 hours on the 'Net. Amount of time spent on the 'Net correlates with owning a computer (.25 $p \leq .001$) and the amount of time the user has known how to use the 'Net (.48 $p \leq .001$).

'Net Activities

E-mail, browsing or surfing, research for school, entertainment, research for work, and learning were the most common activities engaged in on the 'Net (See Table 2). Accessing information on products, doing work on-line, using the newsgroups or IRC

were engaged in by only a third of the respondents while only 16% of the students used the 'Net for shopping.

Table 2 - 'Net Activities

ACTIVITY	% yes
e-mail	88
browse or surf	79
research for school	77
entertainment	77
research for work	75
learning	73
read on-line news or magazines	60
access general information	52
play games	49
access information on products	38
do work on line	36
newsgroups IRC	35
shop	16

'Netsurfing

39% of respondents spent less than one hour a week surfing the 'Net. 36% spent 2-4 hours, 6% spent 5-7 hours, and 6% spent in excess of 7 hours a week surfing the 'Net. The most frequently identified reason for surfing the 'Net was "to find something." Other common reasons were "for fun", "to pass time", and "to see what's going on" (see Table 3).

Table 3 - Reasons for 'Netsurfing

Reason for Surfing	# of respondents	percent of respondents
To find something	49	29
For fun	34	20
To pass time	28	17
To see what is going on	21	12
To learn how to use the 'Net	6	4
To feel less lonely	1	<1
I feel I should	1	<1
Don't surf	15	9

'Net Frustrations

Respondents were also asked about their level of frustration with the 'Net. Mean frustration index score was 2.6 (scale range 1-5, with 1=not at all) suggesting that overall respondents were only sometimes frustrated by the 'Net (Frustration scale reliability alpha=.87). The frustration items receiving the highest ratings related to users being frustrated by the amount of time it takes to access desired materials on the 'Net. The items on the frustration scale receiving the lowest scores dealt with mastery over using the 'Net (see Table 4). Respondents did not seem to have trouble using or remembering how to use the Internet from the responses to the frustration questions.

Table 4 - Frustration with the 'Net

FRUSTRATION ITEMS	MEAN*
I get frustrated because the 'Net is running slowly	3.16
I get frustrated having to wait while things are downloading	3.13
The 'Net graphics take too long to access	3.12
I have trouble finding what I am looking for on the 'Net	2.73
I find I'm seeing the same stuff over and over	2.65
I find the 'Net is overrated	2.58
I get bored using the 'Net	2.46
I get disconnected while I'm on the 'Net	2.24
I find myself thinking that the novelty of the 'Net is gone	2.20
I have trouble using the 'Net	2.18
I have trouble remembering how to get onto the 'Net	1.94

* 1=not at all, 2=rarely, 3=sometimes, 4=often, 5=very often

Gratifications

The 10 a priori sets of gratification scales were examined. All the a priori groupings were found to create generally reliable scales with alphas ranging from .67 for the fame scale to .87 for the surveillance, entertainment, and aesthetic scales with the average reliability equal to .80. Of the a priori gratifications entertainment (mean=2.77), aesthetic (mean=2.75), and future (mean=2.60) were indicated as the most frequent reasons for engaging in 'Net use (see Table 5).

Table 5 - A Priori Gratification Scales

A PRIORI SCALES	Reliability α	Mean *
Entertainment	.87	2.77
Aesthetic	.87	2.75
Future	.86	2.60
Surveillance	.87	2.51
Pass Time/Diversion	.80	2.49
Acquisition	.73	2.32
Social	.81	2.17
Fame	.67	1.95
Identity	.76	1.70
Peer Pressure/ Status	.79	1.66

*1=not at all, 2=rarely, 3=sometimes, 4=often, 5=very often

The next step was to determine whether the a priori groupings were really the appropriate groupings. A factor analysis was run using SPSS/Windows 6.1.3 principal components solution using VARIMAX rotation. The procedure yielded 11 factors with eigenvalues greater than 1.0 (see Table 6).

The first factor, *keep informed*, had an eigenvalue of 20.08 and explained 39% of the variance. The a priori items from the surveillance and future scales load on this factor as does information related items from acquisition, diversion, and celebrity. The items loading on this factor were "to get information like time/weather/stock prices/ sports scores", "to get information about products or services", "to get information I can trust", "to get immediate knowledge of big news events", "to find

information", "to keep learning", "to find new things", "to keep up with technology", "to keep up to date with news that isn't available elsewhere", "to develop new interests", "to get information to pass on to other people", "because I know it will be even more important in the future", and "to read the home pages of other people." Mean score for the factor grouping was 2.64. Reliability alpha for the item set was .94.

The second factor, *diversion entertainment*, had an eigenvalue of 3.81 and explained 7.3% of the variance. "To pass time", "to combat boredom", "to play", "to be entertained", "to have fun", "to relax", "to find excitement", and "to be a part of the information superhighway" loaded together. All but one of the items on this factor came from the diversion and entertainment a priori groupings: "be a part of the information superhighway" was part of the future category. Mean scores for the items in this factor were among the highest rated. The overall mean was 2.80. Reliability alpha was .92.

The third factor was *peer identity*. This factor contained social items, peer pressure items, and identity related items. Included on this factor was "because everyone else does", "to gain status", "to live out a fantasy", "to be accepted for my ideas", "to meet new people", "to satisfy a habit", "to find people like me", and "to get advice or support." Eigenvalue was 3.13 with 6% of the variance being explained. Mean scores tended to be rather low with the overall mean being 1.83 (reliability alpha .87).

Good Feelings was the fourth factor (eigenvalue 1.90, variance explained 3.7%). Items in this factor came from a variety of places, yet they share the common element of describing 'Net use for the purpose of improving mood or emotional state: "To feel good", "to feel important", "to find companionship", "to escape who I am." Mean score was 1.59 and reliability alpha was .79.

Factor five, *communication*, consists of two items, "to stay in touch with people I don't see very often" and "to deliver information to someone." The mean score for this factor was quite high, 2.74 (eigenvalue 1.71, 3.3% of variance).

The sixth factor, *sights & sounds* (Eigenvalue 1.33, 2.6% of variation) contains all the items from the original aesthetics scale: "to look at graphics or animation", "to enjoy the sights and sounds", and "to look for visually interesting graphics and pages", as well as "to learn about famous people" from the celebrity scale. Mean score was 2.72 and reliability was .84.

The seventh factor, *career,* contains items from various a priori groupings that relate to career research and planning: "to stay up to date for my career", "to learn how to do things", "to find out about job opportunities." (Eigenvalue=1.23, 2.4% of variation, reliability alpha= .77, mean=2.33).

The final factor (eigenvalue=1.01, 1.9% of variation), *coolness*, originally contained three items: "to be cool", "because I know I should", and "to make reservations." "To make

reservations" did not fit conceptually. After the item was removed reliability improved considerably. Remaining items had a mean of 1.74 and a reliability alpha of .78.

Three other factors emerged in the factor analysis. "To publish materials", "to order products or services", and "to let people know who I am" clustered together. This factor had a mean of 1.57 and a reliability alpha of .64. "To try out new identities" and "to experience things I can't in the real world" had a mean of 2.01 and a reliability alpha of .61. Finally "to avoid doing what I'm supposed to" became its own factor (mean=1.01). The low reliability scores (.61 to .64) suggest that these factors do not create reliable scales. This lack of reliability combined with the fact that the meaning of some of the items are captured in the other more reliable scales and the lack of conceptual cohesion of these remaining factors led to the decision to not further analyze these items.

Table 6 - Gratification Factor Analysis Results

Table 6 - Gratification Factor Analysis Results

Factor	Meaning	Loading	Mean*	Alpha	Eigen	%Var
Factor 1	**Keep Informed**		**2.64**	**0.94**	**20.08**	**38.6**
Surv	To get information like time/weather/stock prices/sports scores	0.78	2.78			
Surv	To be informed about what is going on in the world	0.74	2.76			
Acq	To get information about products or services	0.71	2.40			
Surv	To get information I can trust	0.70	2.52			
Surv	To get immediate knowledge of big news events	0.68	2.34			
Acq	To find information	0.67	3.44			
Fut	To keep learning	0.66	2.89			
Div	To find new things	0.61	2.79			
Fut	To keep up with technology	0.57	2.64			
Surv	To keep up to date with news that isn't available elsewhere	0.57	2.58			
Fut	To develop new interests	0.55	2.43			
Soc	To get information to pass on to other people	0.51	2.38			
Fut	Because I know it will be even more important in the future	0.46	2.75			
Fame	To read home pages of other people	0.44	2.26			
Factor 2	**Diversion-Entertainment**		**2.80**	**0.92**	**3.81**	**7.30**
Div	To pass time	0.78	2.78			
Div	To combat boredom	0.75	2.88			
Ent	To play	0.73	2.98			
Ent	To be entertained	0.70	3.20			
Ent	To have fun	0.69	2.88			
Div	To relax	0.68	2.20			
Ent	To find excitement	0.62	2.86			
Fut	To be a part of the information superhighway	0.58	2.59			
Factor 3	**Peer Identity**		**1.83**	**0.87**	**3.13**	**6.00**
Peer	Because everyone else does	0.75	1.80			
Peer	To gain status	0.72	1.51			
Id	To live out a fantasy	0.71	1.46			
Id	To be accepted for my ideas	0.67	1.63			
Soc	To meet new people	0.59	2.02			
Div	To satisfy a habit	0.49	1.98			
Soc	To find people like me	0.48	2.17			
Soc	To get advice or support	0.45	1.57			

Table 6 (cont'd).

Factor	Meaning	Loading	Mean*	Alpha	Eigen	%Var
Factor 4	**Good Feelings**		**1.59**	**0.79**	**1.90**	**3.70**
Peer	To feel important	0.68	1.49			
Ent	To feel good	0.63	1.91			
Soc	To find companionship	0.60	1.51			
Id	To escape who I am	0.59	1.41			
Factor 5	**Communication**		**2.74**	**0.76**	**1.71**	**3.30**
Soc	To stay in touch with people I don't see very often	0.77	2.92			
Acq	To deliver information to someone	0.73	2.51			
Factor 6	**Sights & Sounds**		**2.72**	**0.84**	**1.33**	**2.60**
Aesth	To look at graphics or animation	0.74	2.90			
Aesth	To enjoy the sights and sounds	0.62	2.67			
Aesth	To look for visually interesting graphics and pages	0.56	2.64			
Fame	To learn about famous people	0.51	2.24			
Factor 7	**Career**		**2.33**	**0.77**	**1.23**	**2.40**
Sur	To find out about job opportunities	0.64	2.15			
Acq	To learn how to do things	0.60	2.61			
Fut	To stay up to date for my career	0.53	2.26			
Factor 8	**Coolness**		**1.74**	**.78**	**1.01**	**1.90**
Peer	To be cool	0.68	1.62			
Peer	Because I know I should	0.67	1.86			
**Acq	To make reservations	0.40	1.51			
	Dropped		**1.57**		**1.48**	**2.80**
Fame	To publish materials	0.73	1.56	0.64		
Acq	To order products or services	0.63	1.40			
Fame	To let people know who I am	0.52	1.74			
	Dropped		**2.01**	**0.61**	**1.15**	**2.20**
Id	To try out new identities	0.72	1.95			
Id	To experience things I can't in the real world	0.51	2.07			
	Dropped					
Div	To avoid doing what I'm supposed to	0.71	**2.25**		**1.01**	**1.90**

* 1=not at all, 2=rarely, 3=sometimes, 4=often, 5=very often

** Item dropped due to low reliability and conceptual reasons

Predicting time spent on the 'Net

Part of the goal of this study was to determine what accounts for the amount of time users spend on the 'Net. Five blocks of independent variables were used in multiple regressions to try to determine what accounts for time spent on the 'Net: the gratifications, demographics, how respondents learned to use the 'Net, where respondents use the 'Net, and the activities respondents engage in on the 'Net.

In the first multiple regression the keep informed, diversion-entertainment, peer identity, good feelings, communication, sights & sounds, career, and coolness scores were used as the independent variables. And time spent using the 'Net per week was used as the dependent variable. 40% of the variance in time spent on the 'Net was explained by these gratification variables (Multiple R= .63, $p \leq .01$). However, only the gratification variables keep informed and communication were significant at the .05 level (see Table 7).

Table 7 - Regression: Gratifications => Time Spent Using the 'Net

Variable	Beta	Significance
Keep Informed	.27	.019
Diversion Entertainment	.10	.364
Peer Identity	.15	.159
Good Feelings	.00	.926
Communications	.27	<.001
Looks	.01	.894
Career	.06	.518
Coolness	-.11	.182

(Multiple R=.63, $p \leq .01$)

Next grade, age, and gender were used as independent variables (see Table 8). Demographics were found to explain no (<1%) variance in time spent on the 'Net (Multiple R=.10, p= .70).

Table 8 - Demographic Variables => Time Spent Using the 'Net

Variable	Beta	Significance
gender	.10	.236
age	-.02	.842
grade	.09	.857

(Multiple R=.10, p = .70)

In the third regression, where one learns how to use the 'Net were the independent variables. The outcome was that how one learns to use the 'Net has little predictive value in explaining the time spent on the 'Net (multiple R=.30, p=.11). None of the variables in this block were found to be significant (see Table 9).

Table 9 - How Learned to Use 'Net => Time Spent Using the 'Net

Variable	Beta	Significance
Learned in junior high	.03	.768
Learned in high school	.09	.640
Learned in college	.02	.947
Learned in extra curricular class	.11	.239
Learned on my own	.32	.219
Learned from a friend	.06	.806
Learned from parent or relative	.04	.812
Learned from computer lab staff	.14	.212
Learned at work	.07	.615

(multiple R=.30, p=.11)

Next the location at which the 'Net is used variables were used in a multiple regression as the independent variables to see if they had any value in explaining time spent using the 'Net (see Table 10). Location at which respondents use the 'Net was found to have no merit in predicting the variance in time spent on the 'Net (Multiple R=.26, p=.09).

Table 10 - Location 'Net is Used =>Time Spent Using the 'Net

Variable	Beta	Significance
Use at home	-.19	.590
Use at School	-.31	.383
Use at work	-.04	.847
Use at friend's	-.28	.086
Use at library	-.16	.193

(Multiple R=.26, p=.09)

The final set of variables used as the independent variables in the multiple regressions with time spent on the 'Net as the dependent variable were the activities participants engage in on the 'Net. Activities engaged in on the 'Net explained 26% of the variance in 'Net time (see Table 11). However, none of the variables explained time on the 'Net at an acceptable (.05 or better) significance level (Multiple R=.52, $p \leq .01$).

Table 11 - Activities => Time Spent Using the 'Net

Variable	Beta	Significance
research for school	-.01	.905
research for work	-.15	.095
browsing/surfing	-.10	.306
learning	-.07	.486
shopping	.07	.409
reading on-line news or magazines	-.04	.715
doing work on-line	-.06	.506
entertainment	-.18	.062
e-mail	-.05	.491
playing games	.06	.492
newsgroups/IRC	-.16	.101
accessing general information (stocks, weather...)	-.08	.394
accessing information on products	-.02	.863

(Multiple R=.52, $p \leq .01$)

Finally, all the significant variables from the previous five multiple regressions were used as the independent variables in a regression with time spent using the 'Net as the dependent variable. As already described, of all the blocks of variables analyzed, only two variables from the gratifications block were found to significantly explain variance in time spent on the 'Net. Thus the final multiple regression contained only these two significant variables (see Table 12). The end result being that keep informed and communication explained 36% of the variance in 'Net time (Multiple R=.598, $p \leq .01$).

Table 12 - Final Regression to Predict Time Spent Using the 'Net

VARIABLE	BETA	SIGNIFICANCE	R
Keep Informed	.42	<.001	.56
Communication	.26	.001	.48

(Multiple R=.598, p≤.01)

Predicting Gratifications

Regression analysis was also run using each gratification factor as the dependent variable to determine what accounts for variation in motivations for using the 'Net. For each gratification a multiple regression first was run using the demographic variables as independent variable. Then the time variables, time spent on the 'Net, time spent surfing the 'Net, time spent using a computer for work, and time spent using a computer for fun, were used as the independent variables. Next how the Internet is learned was used to try to predict the variance in each gratification. The same process was repeated using the location at which the 'Net is used and the activities respondents engage in on the 'Net.

Predicting Keep Informed

From the five multiple regressions using each block of variables to predict variance in the keep informed gratification age, amount of time using a computer for fun, amount of time surfing the 'Net, learning to use the 'Net from a parent, friend, on own, or at work, using the 'Net to read on-line news or magazines, accessing information on products and to learn were the variables found to be significant (see Table 13). These ten significant variables were then used in the final regression

Table 13 - Keep Informed Regressions

Table 13 - Keep Informed Regressions

Demographics Multiple R = .24**	**Variable**	**Beta**
	Gender	.14
	Age	.25*
	Grade	-.18
Time Multiple R = .66*	**Variable**	**Beta**
	Time spent using the 'Net	.10
	Time using computer for fun	.19**
	Time using computer for work	.06
	Time Surfing on 'Net	.41*
How Learned Multiple R = .35*	**Variable**	**Beta**
	Junior High	.15
	High School	.31
	College	.36
	On own	.74*
	Extra Curricular Class	.15
	From Friend	.46**
	From Parent	.31**
	From Computer lab staff	.15
	At Work	.32**
Location 'Net Used Multiple R= .27	**Variable**	**Beta**
	home	.25
	school	.04
	work	.19
	friend's	-.07
	relative's	-.02
	library	.02

Table 13 (cont'd).

Net Activities Multiple R= .77*	**Variable**	**Beta**
	research for school	.09
	research for work	-.11
	browsing surfing	-.13
	Learning	-.26*
	shopping	.09
	Reading on-line news or magazines	-.14**
	doing work on-line	-.06
	entertainment	-.12
	e-mail	-.11
	playing games	-.01
	newsgroups/IRC	-.13
	accessing general information	-.12
	accessing information on products	-.19*

*p≤.001 **p≤.05

analysis. The final result being that 61% of the variance in the keep informed gratification was explained (see Table 14). An increase in time spent surfing the 'Net and using the 'Net for learning, for reading on-line news or magazines, and for accessing information on products were found to be significant at the .001 level for predicting use of the 'Net to keep informed (Multiple R=.76, $p \leq .01$).

Table 14 - Significant Variables from Block Regression => Keep Informed

variable	beta	significance	R
learning	-.23	<.001	-.57
read on-line news or magazines	-.20	.001	-.53
access info on products	-.21	.001	-.49
age	.05	.412	.13
learn on own	.09	.152	.28
learn from friend	.03	.574	-.05
learn from parent	.10	.078	.01
learn at work	.00	.943	.06
time using computer for fun	.08	.221	.50
time spent surfing the 'Net	.34	<.001	.62

(Multiple R=.76, $p \leq .01$)

Predicting Diversion Entertainment

From the five multiple regressions to determine what variables may significantly explain variance in the Diversion-Entertainment gratification time using the computer for fun, time surfing on the 'Net, time using a computer for work, learning to use the 'Net in an extra curricular class, learning to use the 'Net on one's own, browsing or surfing, learning on the 'Net, engaging in entertaining

Table 15 - Diversion-Entertainment Regressions

Table 15 - Diversion-Entertainment Regressions

Demographics Multiple R = .16	**Variable**	**Beta**
	gender	.06
	age	-.00
	grade	-.15
Time Multiple R = .48*	**Variable**	**Beta**
	Time using 'Net	.08
	Time using computer for fun	.24*
	Time using computer for work	-.19*
	Time Surfing on 'Net	.41*
How Learned Multiple R = .39*	**Variable**	**Beta**
	Junior High	.06
	High School	.22
	College	.25
	In a class	.19**
	On own	.67*
	From friend	.36
	From Parent	.25
	From computer lab staff	.19
	At work	.16
Location 'Net Used Multiple R= .19	**Variable**	**Beta**
	home	.14
	school	-.04
	work	.02
	friend's	-.06
	relative's	-.04
	library	-.01

Table 15 (cont'd).

Net Activities Multiple R= .69*	**Variable**	**Beta**
	research for school	.11
	research for work	.05
	browsing/surfing	-.19*
	learning	-.19*
	shopping	.07
	reading on-line news or magazines	.-07
	doing work on line	.06
	entertainment	-.26*
	e-mail	-.07
	playing games	-.26*
	newsgroups/IRC	-.16**
	accessing general information	-.01
	accessing information on products	-.01

*p≤.001 **p≤.05

activities on the 'Net, playing games on the 'Net, and using the newsgroups or IRC were found to be significant at the .05 level or better (see Table 15). These ten variables were then used in the final multiple regression to explain variance in diversion-entertainment. This final analysis resulted in 51% of the variance in diversion-entertainment being explained (see Table 16). An increase in time spent surfing the 'Net and engaging in the activities surfing or browsing, playing games, and entertaining activities were the significant variables predicting the diversion-entertainment gratification (Multiple R=.71, $p \leq .01$).

Table 16 - Significant Variables from Block Regressions => Diversion Entertainment

VARIABLE	BETA	SIGNIFICANCE	R
browsing or surfing	-.18	.015	-.48
learning	-.12	.079	-.39
entertainment	-.20	.008	-.51
playing games	-.14	.026	-.38
newsgroups/IRC	.01	.862	-.26
learn in extracurricular class	.08	.215	.11
learn on own	.13	.056	.33
time spent using computer for fun	.11	.183	.43
time spent using computer for work	-.09	.164	.12
time spent surfing	.27	.001	.53

(Multiple R=.71, $p \leq .01$)

Predicting Peer Identity

None of the variables from any of the five blocks of variables were found to be significant in predicting variance in the peer identity gratification (see Table 17).

Predicting Good Feelings

Out of all the variables in the five blocks only engaging in entertaining activities (R=.30) on the 'Net was found to explain variance in the good-feelings gratification at the .05 level of significance or better (see Table 18).

Predicting Communications

From the five block regressions seven variables - age, grade, time using computer for fun, using the 'Net at home, browsing/surfing, e-mail, newsgroups/IRC - were found to be significant (see Table 19). These seven variables were then used in the final regression analysis (see Table 20). 37% of variance in use of the 'Net to fulfill communication needs was explained in the final regression. Grade, the amount of time the computer is used for fun, using the 'Net at home, uses of newsgroups/IRC, and use of e-mail were found to be the variables explaining communication with significance at the .05 level or better (Multiple R=.60, $p \leq .01$). Lower grade levels and an increase in the amount of time the computer is used for fun were predictive of higher levels of use of the 'Net to fulfill a need for communication.

Table 17 - Peer Identity Regressions

Table 17 - Peer Identity Regressions

Demographics Multiple R = .05	**Variable**	**Beta**
	gender	.04
	age	-.01
	grade	-.03
Time Multiple R = .47*	**Variable**	**Beta**
	time spent using 'Net	.21
	time using computer for fun	.14
	time using computer for work	-.08
	time spent surfing	.22
How Learned Multiple R = .18	**Variable**	**Beta**
	Junior High	.17
	High School	.17
	College	.33
	In a class	.02
	On own	.37
	From friend	.29
	From Parent	.22
	From computer lab staff	.07
	At work	.20
Location 'Net Used Multiple R= .10	**Variable**	**Beta**
	home	.27
	school	.22
	work	.20
	friend's	.06
	relative's	.06
	library	.08

Table 17 (cont'd).

Net Activities Multiple R= .45**	**Variable**	**Beta**
	research for school	.05
	research for work	-.07
	browsing/surfing	.01
	learning	-.16
	shopping	.16
	reading on-line news or magazines	-.09
	doing work on line	-.00
	entertainment	-.19
	e-mail	-.02
	playing games	-.11.
	newsgroups/IRC	-.09
	accessing general information	-.03
	accessing information on products	-.05

*p≤.001 **p≤.05

Table 18 - Good Feeling Regressions

Table 18 - Good Feeling Regressions

Demographics Multiple R = .12	**Variable**	**Beta**
	gender	-.08
	age	.07
	grade	-.12
Time Multiple R = .38*	**Variable**	**Beta**
	time spent using the 'Net	.16
	time spent using computer for fun	.12
	time spent using computer for work	-.12
	time spent surfing the 'Net	.19
How Learned Multiple R = .25	**Variable**	**Beta**
	Junior High	.15
	High School	.13
	College	.04
	In an extra- curricular class	.05
	On own	.28
	From friend	.08
	From Parent	.15
	From computer lab staff	.12
	At work	.06
Location 'Net Used Multiple R= .11	**Variable**	**Beta**
	home	.24
	school	.23
	work	.17
	friend's	.05
	relative's	.09
	library	.13

Table 18 (cont'd).

Net Activities Multiple R= .43**	**Variable**	**Beta**
	research for school	.07
	research for work	<.01
	browsing/surfing	.08
	learning	-.09
	shopping	.06
	reading on-line news or magazines	-.11
	doing work on line	.15
	entertainment	-.20**
	e-mail	-.04
	playing games	-.17
	newsgroups/IRC	-.19
	accessing general information	-.01
	accessing information on products	-.08

*p≤.001 **p≤.05

Table 19 - Communication Regressions

Table 19 - Communication Regressions

Demographics Multiple R = .21	**Variable**	**Beta**
	gender	-.10
	age	.22**
	grade	-.21**
Time Multiple R = .56*	**Variable**	**Beta**
	Time spent on the 'Net	.19
	Time spent using computer for fun	.29*
	Time spent using computer for work	.11
	Time spent surfing the 'Net	.08
How Learned Multiple R = .29	**Variable**	**Beta**
	Junior High	.08
	High School	.24
	College	.17
	In a class	.14
	On own	.49
	From friend	.24
	From Parent	.19
	From computer lab staff	.18
	At work	.15
Location 'Net Used Multiple R= .24	**Variable**	**Beta**
	home	.68**
	school	.55
	work	.40
	friend's	.12
	relative's	.05
	library	.10

Table 19 (cont'd).

Net Activities Multiple R= .56*	**Variable**	**Beta**
	research for school	.04
	research for work	-.00
	browsing/surfing	-.18**
	learning	-.06
	shopping	.01
	reading on-line news or magazines	.03
	doing work on line	-.06
	entertainment	.09
	e-mail	-.30*
	playing games	-.01
	newsgroups/IRC	-.26*
	accessing general information	.00
	accessing information of products	-.16

*p≤.001 **p≤.05

Table 20 - Significant Variables from Block Regressions => Communication

VARIABLE	BETA	SIGNIFICANCE	R
browsing/surfing	-.09	.189	-.25
e-mail	-.22	.002	-.35
newsgroups/IRC	-.26	<.001	-.40
age	.09	.300	.10
grade	-.18	.036	-.07
use 'Net at home	-.01	.942	.15
Time spent using computer for fun	.32	<.001	.47

(Multiple R=.60, $p \leq .01$)

Predicting Sights & Sounds

From the five block regressions using the demographics, time, learned, location, and activity variables to predict variance in sights & sounds; grade, time spent using the computer for fun, time spent surfing the 'Net, using the 'Net to learn and to play games were found to be the significant variables for explaining variance (see Table 21). These five variable were used in the final regression. 31% of the variance in using the 'Net to fulfill aesthetic needs was explained by the final regression (see Table 22). Using the 'Net to learn and increased time spent surfing on the 'Net were found to be the significant variables in the final regression (Multiple R=.56, $p \leq .01$).

Table 21 - Sights & Sounds Regressions

Table 21 - Sights & Sounds Regressions

Demographics Multiple R = .19	**Variable**	**Beta**
	gender	.11
	age	.16
	grade	-.19**
Time Multiple R = .53*	**Variable**	**Beta**
	Time spent on the 'Net	.01
	Time spent using computer for fun	.20**
	Time spent using computer for work	-.12
	Time spent Surfing on 'Net	.43*
How Learned Multiple R = .29	**Variable**	**Beta**
	Junior High	.02
	High School	.07
	College	.07
	In a class	.16
	On own	.32
	From friend	.08
	From Parent	.21
	From computer lab staff	.01
	At work	.07
Location 'Net Used Multiple R= .19	**Variable**	**Beta**
	home	.00
	school	-.21
	work	-.07
	friend's	-.05
	relative's	-.02
	library	-.05

Table 21 (cont'd).

'Net Activities Multiple R= .59*	**Variable**	**Beta**
	research for school	.11
	research for work	-.06
	browsing/surfing	-.17
	learning	-.19**
	shopping	.05
	reading on-line news or magazines	-.07
	doing work on line	.15
	entertainment	-.13
	e-mail	-.09
	playing games	-.23*
	newsgroups/IRC	-.14
	accessing general information	.00
	accessing information of products	-.09

*p≤.001 **p≤.05

Table 22 - Significant Variables from Block Regressions => Sights & Sounds

VARIABLES	BETA	SIGNIFICANCE	R
learning	-.18	.017	-.38
playing games	-.13	.066	-.31
grade	-.04	.607	-.10
Time spent using computer for fun	.12	.164	.41
Time spent surfing the 'Net	.33	<.001	.50

(Multiple R=.56, $p \leq .01$)

Predicting Career

From the demographic and location blocks no variables were found to be significant. From the time block only the amount of time spent using the computer for work was significant. The activities using the 'Net to learn, access product information, and using the newsgroups/IRC were significant. Having learned to use the 'Net in high-school, college, from a parent, friend, at work, and on own were the significant variables from the learned block (see Table 23). When these significant variables from each block were used in the final regression analysis, 44% of the variance in using the 'Net to meet career needs was explained (see Table 24). Using the newsgroups/IRC, using the 'Net to learn, accessing information on products, and greater levels of time spent using the computer for work were the significant variables (Multiple R=.66, $p \leq .01$) predicting use of the "net for career purposes.

Table 23 - Career Regressions

Table 23 - Career Regressions

Demographics Multiple R = .22**	**Variable**	**Beta**
	gender	.08
	age	.12
	grade	.12
Time Multiple R = .57*	**Variable**	**Beta**
	Time spent on the 'Net	.17
	Time spent using computer for fun	.11
	Time spent using computer for work	.22*
	Time spent Surfing on 'Net	.20
How Learned Multiple R = .33**	**Variable**	**Beta**
	Junior High	.15
	High School	.45**
	College	.49**
	In a class	.11
	On own	.77*
	From friend	.52**
	From Parent	.35**
	From computer lab staff	.19
	At work	.47*
Location 'Net Used Multiple R= .24	**Variable**	**Beta**
	home	.01
	school	-.03
	work	.19
	friend's	-.12
	relative's	-.03
	library	.03

Table 23 (cont'd).

'Net Activities Multiple R= .64*	**Variable**	**Beta**
	research for school	-.00
	research for work	-.15
	browsing/surfing	-.03
	learning	-.25*
	shopping	.07
	reading on-line news or magazines	.05
	doing work on line	-.04
	entertainment	.01
	e-mail	-.08
	playing games	.02
	newsgroups/IRC	-.23*
	accessing general information	-.03
	accessing information of products	-.21**

*p≤.001 **p≤.05

Table 24 - Significant Variables from Block Regression => Career

VARIABLE	BETA	SIGNIFICANCE	R
Learning	-.24	.001	-.47
newsgroups/IRC	-.26	.001	-.47
accessing information on products	-.19	.013	-.42
Learned in high school	.15	.182	-.02
Learned in college	.11	.379	-.13
Learned on my own	.16	.227	.19
Learned from friend	.08	.519	-.09
Learned from parent or relative	.15	.097	.001
Learned at work	.02	.780	.17
Time spent using computer for work	.25	<.001	.40

(Multiple R=.66, $p \leq .01$)

Predicting Coolness

Few of the variables from any of the blocks were significant in explaining variance in using the 'Net to be cool. Only having learned to use the 'Net from a parent or relative (R=.20) was found to be significant (see Table 25).

Table 25 - Significant Variables from Block Regression => Coolness

Table 25 - Significant Variables from Block Regression => Coolness

Demographics Multiple R = .16	**Variable**	**Beta**
	Gender	-.01
	Age	.06
	Grade	-.19
Time Multiple R = .26**	**Variable**	**Beta**
	Time spent on the 'Net	.09
	Time spent using computer for fun	<.01
	Time spent using computer for work	-.07
	Time spent Surfing on 'Net	.20
How Learned Multiple R = .28	**Variable**	**Beta**
	Junior High	.11
	High School	.36
	College	.26
	In a class	.08
	On own	.29
	From friend	.26
	From Parent	.38*
	From computer lab staff	.07
	At work	.21
Location 'Net Used Multiple R= .15	**Variable**	**Beta**
	home	.42
	school	.32
	work	.23
	friend's	.09
	relative's	.08
	library	.18

Table 25 (cont'd).

Net Activities Multiple R= .32	**Variable**	**Beta**
	research for school	.16
	research for work	-.09
	browsing/surfing	.00
	learning	-.09
	shopping	.08
	reading on-line news or magazines	-.04
	doing work on line	.02
	entertainment	-.10
	e-mail	-.08
	playing games	-.17
	newsgroups/IRC	.05
	accessing general information	-.00
	accessing information of products	-.07

*p≤.001 **p≤.05

Gratification Regression Summary

To summarize, after performing five regressions on each of the eight gratifications using each of the blocks of five variables, the significant variables from each block were used in a final regression for each gratification. In the end the variables found to be significant in predicting variance in each gratification are as follows:

- *Keep Informed*: time spent surfing the 'Net and whether the subject used the 'Net for learning, reading on-line news or magazines, and accessing information on products (Multiple R=.79).

- *Entertainment-Diversion*: time spent surfing the 'Net and engaging in surfing or browsing, playing games, and entertainment (Multiple R=.71).

- *Good Feelings*: Whether the subject engages in entertaining activities on the 'Net (R=.30).

- *Communication*: Grade, the amount of time the computer is used for fun, using the 'Net at home, whether the subject uses newsgroups/IRC, and e-mail (Multiple R=.60).

- *Sights & Sounds*: Amount of time the subject surfs the 'Net and engaging in learning activities on the 'Net (Multiple R=.56).

- *Career*: Amount of time spent using a computer for work, use of newsgroups or IRC, learning on the 'Net, and accessing information on products (Multiple R=.66).

- *Coolness*: Whether the subject learned to use the 'Net from a parent or relative (R=.20).

Predicting 'Netsurfing Time

To determine what accounts for the variance in time spent surfing the 'Net separate regressions were performed using the variables in each of the following blocks: reasons for surfing, demographics, time, 'Net gratifications, how learned to use the 'Net, location 'Net is used, and 'Net activities (see Table 26). From each of these blocks of regressions the significant items - to find something in particular, to pass time, to see what's going on, for fun, to feel less lonely, time spent using the computer for work, time spent using the computer for fun, the gratification keep informed, learned in high school, learned on own, using the 'Net for entertaining activities - were used in the final regression analysis (see Table 27). The final regression analysis using time spent surfing the 'Net as the dependent variable indicated that the significant predictors of an increase in time spent surfing were surfing to try to find something in particular, surfing for fun, or to feel less lonely; greater frequency of using the 'Net for surveillance; whether respondents learned to use the 'Net in high school; and greater amounts of time spent using a computer for fun and for work. (Multiple R=.74, $p \leq .01$).

Table 26 - Time Spent Surfing Regressions

Table 26 - Time Spent Surfing Regressions

Surf Reasons Multiple R = .41*	**Variable**	**Beta**
	to find something in particular	.65*
	to pass time	.48*
	to see what's going on	.48*
	for fun	.53*
	to feel less lonely	.21*
	because I feel I should	.04
	to learn how to use the 'Net	.16
Demographics Multiple R = .12	**Variable**	**Beta**
	gender	.18
	age	.01
	grade	-.03
Time Multiple R = .59*	**Variable**	**Beta**
	Time using computer for fun	.48*
	Time using computer for work	.21**
Gratifications Multiple R = .67*	**Variable**	**Beta**
	Keep Informed	.30*
	Diversion Entertainment	.18
	Peer Identification	.12
	Good Feelings	-.07
	Communication	.14
	Aesthetics	.11
	Career	.09
	Coolness	-.09

Table 26 (cont'd).

How Learned Multiple R = .29	**Variable**	**Beta**
	Junior High	.19
	High School	.49**
	College	.37
	In a class	.13
	On own	.71**
	From friend	.47
	From Parent	.29
	From computer lab staff	.23
	At work	.31
Location 'Net Used Multiple R=24	**Variable**	**Beta**
	home	.41
	school	.32
	work	.32
	friend's	<.01
	relative's	.09
	library	.05
'Net Activities Multiple R= .56*	**Variable**	**Beta**
	research for school	-.01
	research for work	-.11
	browsing/surfing	-.09
	learning	-.13
	shopping	.01
	reading on-line news or magazines	-.01
	doing work on line	-.08
	entertainment	-.23*

Table 26 (cont'd).

'Net Activities (cont'd).	**Variable**	**Beta**
	e-mail	-.05
	playing games	-.07
	newsgroups/IRC	-.14
	accessing general information	-.01
	accessing information of products	-.02

*p≤.001 **p≤.05

Table 27 - Significant Variables from Block Regressions => Time Spent Surfing

VARIABLE	BETA	SIGNIFICANCE	R
surf to find something	.23	.019	.13
surf to pass time	.17	.055	.03
surf to see what's going on	.11	.234	.08
surf for fun	.21	.021	.05
surf to feel less lonely	.14	.019	.12
keep informed	.36	<.001	.62
use 'Net for entertainment	-.13	.064	-.39
learned in high school	.15	.018	.04
learned on own	-.03	.684	.17
time spent using computer for fun	.28	<.001	.56
time spent using computer for work	.15	.020	.40

(Multiple R=.74, $p \leq .01$)

Predicting 'Net Frustrations

In order to further examine frustration with the 'Net, regressions were performed to see what variables explain variance in the frustration index scores. To this end five multiple regressions were performed. The first analysis used the demographic variables as independent variables. None of the demographic variables were found to be significant. The second analysis used the time variables. Time spent surfing the 'Net and time spent using the 'Net were found to be significant in explaining variance in the frustration index (Multiple R=.23). The third analysis used the

Table 28 - Frustration Regressions

Table 28 - Frustration Regressions

Demographics Multiple R = .13	**Variable**	**Beta**
	Gender	.02
	Age	.01
	Grade	.12
Time Multiple R = .23**	**Variable**	**Beta**
	Time spent on the 'Net	.37*
	Time spent using computer for fun	-.13
	Time spent using computer for work	-.06
	Time spent Surfing on 'Net	-.34*
How Learned Multiple R = .23	**Variable**	**Beta**
	Junior High	.02
	High School	.21
	College	.35
	In a class	.02
	On own	.16
	From friend	.23
	From Parent	.15
	From computer lab staff	-.04
	At work	.05
Location 'Net Used Multiple R= .15	**Variable**	**Beta**
	home	-.03
	school	.00
	work	-.15
	friend's	-.01
	relative's	.02
	library	-.04

Table 28 (cont'd).

'Net Activities Multiple R= .34	**Variable**	**Beta**
	research for school	-.15
	research for work	-.05
	browsing/surfing	-.02
	learning	.21**
	shopping	.07
	reading on-line news or magazines	-.05
	doing work on line	.07
	entertainment	.09
	e-mail	-.16
	playing games	.04
	newsgroups/IRC	-.04
	accessing general information	-.06
	accessing information of products	.16

*p≤.001 **p≤.05

variables that described how the 'Net was learned. Nothing was found to be significant. The variables describing where the 'Net is used were used as the fourth set of independent variables, and none were found to be significant. The fifth regression used the 'Net activities as the independent variables. Engaging in learning activities on the 'Net was found to be a significant predictor of the variance (Multiple R=.34) (see Table 28). Then a final regression was performed using the significant variables from the five previously explained regressions (see Table 29). This regression analysis determined that 7% of the variance in frustration scores was explained by the amount of time respondents spent on the 'Net and by the amount of time spent surfing the 'Net (Multiple R=.26, p=.01). Greater amounts of time spent using the 'Net was associated with greater frustration with the 'Net while greater amounts of time spent surfing the 'Net was associated with less frustration with the 'Net.

Table 29 - Significant Variables from Block Regressions => Frustration

VARIABLE	BETA	SIGNIFICANCE	R
learning	.13	.129	.15
Time spent surfing the 'Net	-.33	.014	-.14
Time spent using the 'Net	.31	.019	.01

(Multiple R=.26, p=.01)

Chapter 5

DISCUSSION

The regressions predicting variance in the gratifications are pretty much as common sense would dictate. Keep informed was predicted by the amount of time spent surfing, using the 'Net to learn, reading on-line news and magazines, and accessing product information. Reading magazines, accessing product information, and using the 'Net to learn are clearly information gathering activities. Time spent surfing is consistent with information use since it was found that the most common reason for surfing was to find something. Thus, all the variables that predict the keep informed gratification relate to information or finding information.

Entertainment-diversion was predicted by the amount of time spent surfing, using the 'Net to surf or browse, playing games on-line, and engaging in entertaining activities. Since the second most common reason for surfing was for fun, variance in the entertainment-diversion gratification, as one would expect, was predicted by variables describing fun uses of the 'Net.

Communication was predicted by using e-mail, newsgroups/IRC, time spent using a computer for fun, using the 'Net from home, and being in a lower grade level in college. E-mail and newsgroups/IRC are avenues for communicating with other people on the 'Net. These are the activities where people can exchange ideas

directly with others. Thus it makes sense that these activities have value in explaining variance in using the 'Net for communication. Using the 'Net at home is logical if people are using the 'Net as a replacement for the phone in communicating and talking with others. The appearance of time spent using the computer for fun as a predictor variable supports the idea that the 'Net is used as a way to have fun talking with others much in the same way a phone is used.

Interestingly engaging in learning activities on the 'Net showed up as a predictor of using the 'Net for sights and sounds. It may be that subjects were "learning" about celebrities, since one of the items on this factor was "learn about famous people." Or it could be that subjects wished to learn about the visuals and other features of the 'Net. It is less surprising that surfing or browsing predicts variance in the sights and sounds gratification. Surfing or browsing is consistent with sights and sounds. The idea of wandering around the 'Netsurfing or browsing goes hand in hand with enjoying the aesthetics of the web.

Not surprisingly time spent using a computer for work, engaging in learning activities, and using the newsgroups/IRC explained variance in using the 'Net for career purposes. Employers often post job openings and job seekers often post résumes on various employment related newsgroups. Accessing information on products or services would make sense as a predictor of career uses of the 'Net if the information being accessed relates to research on products made by prospective employers or research into job placement services.

Only engaging in entertaining activities was found to be a significant predictor of using the 'Net for good feelings which is logical though not very enlightening. Variance in using the 'Net to increase one's feeling of coolness was predicted by whether the 'Net was learned from one's parents or relatives. Do people who learned from their parents or relatives have a greater need to feel cool than people who learned to use the 'Net elsewhere?

More research needs to be conducted to determine what explains variance in the peer-identity gratification. Nothing was found to be a significant predictor in this study, though time spent on the 'Net is correlated with the peer-identity gratification (.44). This gratification may need to be investigated further with a sample that includes more heavy users of the 'Net since few respondents in this study spent much time using the 'Net.

Overall the uses-and-gratifications theory explained a good deal of the variance in time spent using the 'Net. This study shows that the uses-and-gratifications theory holds promise for explaining 'Net use. Nearly forty percent of the variance in time spent using the 'Net was explained by the gratifications that were examined in this study. The 'Net is used primarily to keep informed, for entertainment and diversion, to maintain communication, and to look at the sights and sounds of the 'Net. In general this study has basically supported popular perceptions of the 'Net. Gratification items that tried to tap into new and unique features of the 'Net did not fare anywhere near as well as the gratifications uncovered time and time again by

media researchers. Information, entertainment, diversion, and social gratifications are seen over and over again. This study, too, found that keep informed (information), entertainment-diversion, communication (social) gratifications fueled use of the medium.

The use of the 'Net as a career tool is unique. While newspapers may also be able to fulfill career gratifications, no other media offers the career research and job search opportunities that the 'Net offers. The global scope and ease of posting information makes the 'Net uniquely suited for this use.

It should be noted that none of the gratifications had a mean of over 2.8 on a scale of 1 to 5 (1=not at all, 5=very often). The low level of the means suggests that there is not one or even two needs for which users always go to the 'Net to fulfill. It appears that the huge number of activities available on the 'Net prevent any one gratification from being often or very often sought out by users. Respondents, instead, sometimes use the 'Net for one purpose and sometimes use it for another.

Users in this study spent very little time using the 'Net for making transactions or acquisitions aside from information. It may be that the 'Net is being used by college students for transactions in the form of information, but not for ordering other goods and services. Studies of the Qube system in the mid-eighties prompted "researches to predict that...the surveillance function of this information utility [Qube-type services] will be adopted more rapidly than the transaction function" (Williams et al,

1984). From the results of this study this prediction may also apply to the 'Net. Information and surveillance functions are common uses among college students, but shopping and ordering products or services via the 'Net are not.

While using the 'Net to meet a need for entertainment-diversion was the most frequent use of the 'Net, using the 'Net to keep informed and for communication explained nearly 36% of the variance in time spent using the 'Net. From this result it seems that the majority of users engage in 'Net use to be entertained or diverted, but what may separate heavy users from light users is use of the 'Net for communication and informational needs. Is this just because it takes longer to read information and correspondence or are people who use the 'Net for information and communicating with people more reliant on the 'Net?

The 'Net offers easy and inexpensive access to information about geographically distant events, institutions, and locations that would be inconvenient to obtain through other means. And using the phone or face to face for communication can be more costly. For students the free nature of 'Net communication with friends and relatives may be an attractive element of the 'Net. Could it be that the users seeking information and communication gratifications have become more dependent on the 'Net because it offers forms of information that are sometimes hard to come by elsewhere and an inexpensive means of communication? Could it be that people who use the 'Net for entertainment and diversion spend less time on-line because there are other alternatives for seeking those gratifications?

Reasons for using the 'Net are not radically different from the motivations for using other media outlets. In some ways the biggest difference may be that the 'Net acts as "one stop shopping" for a variety of different needs. Could the 'Net be a functional alternative for all forms of conventional media? Perse and Courtright (1993) found that conversation best fulfills any communication needs; telephones fulfill interpersonal needs; television, videos, and movies fulfill entertainment and escapist needs; and the print media fulfills learning or informational needs. The 'Net does all of this. Entertainment-diversion needs, interpersonal communication needs, informational needs, aesthetic needs, career research, and improving mood either by improving a sense of good feelings or coolness can be achieved by use of the 'Net.

Like television and radio the 'Net can be used for entertainment, information, and passing time. Like a newspaper the 'Net can be used to learn, for entertainment, and to pass time (Lichtenstein & Rosenfeld, 1984). The interactive nature of the 'Net makes the 'Net a communication tool like the telephone that is used by people to keep in touch with others. Additionally the 'Net like a telephone is used for seeking information and entertainment (LaRose & Mettler, 1990, O'Keefe & Sulanowski, 1995). Television and radio are used for parasocial interaction or companionship (Greenberg, 1974, Conway & Rubin, 1991), the 'Net can be used for real interaction. In these respects the 'Net could become a substitute for television use, radio, use, newspapers, telephone, and even face to face communication.

As Williams, Phillips, and Lum (1985) suggested, new communication media "may affect the structure of communication in society and make available a greater range of choice for satisfying communication needs. New media uses may complement uses already studied. Previously identified uses may shift to new media from old media." From the results of this study it appears the 'Net has done just that - provided users with an additional choice. Thus, now that the 'Net has gained prominence it would be worthwhile to include the 'Net in a repeat of Perse and Courtright's (1993) study *The Normative Images of Communication Media in the New Media Environment* in order to better understand how the 'Net compares with other media.

Few users in the sample were heavy users of the 'Net. 74% of respondents spent four hours or less a week using the 'Net. Only five respondents spent more than twenty hours a week using the 'Net. Thus little support was found for the idea that people are addicted to the 'Net. The majority of the respondents spent less than an hour a day on the 'Net. Thus, due to the sample, few conclusions can be drawn about differences between heavy and light users of the 'Net. Further research should be conducted with heavy users. The results of this study indicate that the communication and keep informed motivations predict the amount of time spent on the 'Net, but given the general low level of 'Net use among the respondents it would be premature to say that 'Net addicts have a higher than average need to keep informed and to communicate with others using the 'Net.

Interestingly time spent surfing the 'Net, not time spent using the 'Net was the measurement of time that was most often a significant predictor of gratifications sought. Time spent surfing was a significant predictor of keep informed, entertainment-diversion, and sights and sounds. Time spent using the 'Net did not show up as a significant predictor of any of the gratifications. Possibly time spent surfing measured non-compulsory use of the 'Net, while time spent using the 'Net may have captured both compulsory and non-compulsory uses.

Uses-and-gratifications may explain media use in a non-compulsory situation when the users are making a decision based on internal desires, emotional states, and other psychological states of being. Uses-and-gratification studies of television, radio, and other conventional media may have measured mainly optional or non-compulsory media use. Few people are instructed to watch television or listen to the radio for work or school - media insiders, scholars, and students notwithstanding. Previous studies with media less likely to be used for work or school purposes have not had to grapple much with a distinction between using because you want to and using media because you have to. Since use of the 'Net can be mandated by classroom assignments or work assignments not all use of the 'Net stems from the psychological and sociological motivations that the uses-and-gratifications theory initially set out to capture (Rubin, 1994). None of the scales measured motivations such as "because I had to", "it was what I was told to do", or "it was part of the assignment." Such motivations may need to be investigated with relation to the 'Net. Creation of these type items and an investigation of compulsory use versus non-

compulsory use may be helpful in identifying why time spent using the 'Net and time spent surfing the 'Net appeared to be very different things. Investigating compulsory use of the 'Net may also help to explain more variance.

Reasons for surfing the 'Net were to find something, for fun, to pass time, and to see what is going on. Reasons for surfing were very similar to the gratifications that are predicted by time spent surfing. The gratifications that are predicted by time spent surfing are keep informed, entertainment-diversion, and sights and sounds. For fun and to pass time are very similar to items in the entertainment-diversion scale. To find something and to see what's going on is similar to keep informed. However, to see what's going on can also be easily construed as looking around at the sights and sounds of the 'Net. Time spent surfing is predicted by surfing to find something, surfing for fun, surfing to feel less lonely, using the 'Net to keep informed, learning to use the 'Net in high school, the amount of time the computer is used for fun, and the amount of time the computer is used for work. All of these predictors suggest a high affinity with and orientation toward computers. People who learned the 'Net early on in high school, people who spend a lot of time using computers for fun or for work, and people with a high need to keep informed by using the 'Net are likely to spend a lot of time surfing to find things, for fun, and to feel less lonely.

The findings about reasons for 'Netsurfing suggest that Heeter's (1985) theory about channel surfing being a means of coping with an "abundance of choice" may very well apply to 'Netsurfing. 'Netsurfing is used as a tool for finding information or

situations on-line that meet the needs of a user. With a medium like the 'Net, users may approach the 'Net "with a variety of overt and covert potential goals (or needs) that might be satisfied by [accessing] any number of different available" (Heeter, 1985) activities or services. Thus surfing is part of the decision making and selection process. However, as suggested in The New York Times, 'Netsurfing is also engaged in by people to "waste time" (Flynn, 1995 & Gibson, 1996). Passing time was a major reason for 'Netsurfing, as was 'Netsurfing for fun. What is unclear is whether Hoffman and Novak's (1994) assertion that people 'Netsurf because they enjoy gaining mastery of the medium has been supported or rejected by the respondents. Users say they surf for fun, but it is unclear whether the fun element is the gaining of mastery. Few users (4%) reported surfing in order to learn how to use the 'Net. However, this option may or may not have captured the essence of Hoffman and Novak's theory of surfing.

Research needs to be conducted in order to better define 'Netsurfing. Is 'Netsurfing the same as browsing? Is 'Netsurfing using the 'Net when you are not forced to? The term is not well defined either in the press or in this study. 'Netsurfing due to its value in predicting gratifications sought is worthy of research attention. However, if the feasibility of a channel surfer being able to truthfully articulate the uses-and-gratifications of the selection made as a result of channel surfing is questionable (LaRose, 1992), can users be expected to be able to articulate the uses-and-gratifications of a selection made as the result of 'Netsurfing? What does 'surfing really mean? What do users really do when they surf? Where do they go, how do

they navigate or surf? Are channel surfers likely to be 'Net surfers? Are the two activities similar? Are they engaged in for the same reason? Neither channel surfing nor 'Netsurfing are well understood. What are the uses-and-gratifications of 'Netsurfing or channel surfing as an activity or use of media in and of itself? Clearly this study suggests that further investigation is needed to better understand both 'Netsurfing and the results of this current study.

The main frustration with the 'Net was found, as suggested in the popular press, (Flynn, 1995 & Garfinkel, 1996) to be the slowness of accessing materials. Respondents were frustrated by having to wait. The other major frustration with the 'Net was that users have trouble finding what they are looking for. Greater amounts of time spent using the 'Net was associated with greater frustration with the 'Net while greater amounts of time spent surfing the 'Net was associated with less frustration with the 'Net. Clearly the speed of the 'Net is a major concern. Few users in the sample were frustrated because they had trouble using the 'Net or remembering how to use the 'Net. It may be that the students in this study were fortunate in having the ability to access the 'Net in computer labs where little skill above basic computer competency is needed. It may also be a case of self selection, 'Net users may be more computer competent in general and hence are less likely to have trouble using the 'Net than would users who did not opt on their own to use the 'Net. Research into frustration with the 'Net ought to be carried out with a sample of the general public and also with users who had to learn the 'Net either for work or school.

The majority of respondents did learn how to use the 'Net in a manner that is consistent with them choosing to learn the 'Net instead of being compelled. 55% of the sample either learned on their own or from a friend or relative. 36% learned in a class in school or at work. The suggestion is that most 'Net users are self selected. They learned and maybe continue to use the 'Net because they want to not because they have to. However, from the data nothing conclusive can be said in this regard. People who learned in a class may have opted to take a class in order to learn how to use the 'Net. Likewise, a friend, parent, or relative may have compelled the respondent to learn to use the 'Net through peer pressure or parental pressure. Further research and examination would be required to truly determine how and why people learn to use the 'Net.

Demographics were of little value in understanding 'Net use in this study. This may be do to the homogenous nature of the student sample. On the other hand demographics may be more useful in predicting who uses the 'Net. This study only looked at people who used the 'Net. Thus little information is known about the demographics of non-'Net users. There were no gender differences found among 'Net users. Though more males than females filled out the instrument, it is not known whether the number of females using the 'Net is proportional to the number of females in the class where the survey was administered. As previously mentioned the only time a demographic variable was found to have any predictive value was that grade level explained variance in using the 'Net for communication needs with

lower grade levels being associated with increased use of the 'Net to fulfill communication needs. Clearly to understand the relationship between 'Net use and demographics a representative sample of the population at large needs to be studied.

Given the student sample, the results of this study cannot be generalized to the population at large. Similar research using a general population sample is needed. As previously mentioned further work must be undertaken to better define and understand terms such as 'Netsurfing. Research may need to be conducted to better separate information from entertainment. It appears people use information for fun on the 'Net. When time surfing predicts keep informed and for fun predicts time spent surfing, there is some unclarity about what information, surfing, and fun is in the 'Net environment.

From this study the only variables having any merit in explaining variance in time spent using the 'Net were the uses-and-gratifications variables. It would be worthwhile to investigate whether technology related issues such as the type and speed of the connection to the Internet help to explain additional variance in time spent on the 'Net. As previously mentioned exploring compulsory use of the 'Net may also be of assistance in explaining the variance. While explaining 36% of the variance in time spent using the 'Net through uses-and-gratifications is a good start, there is still 64% of the variance unaccounted for. Uses-and-gratifications shows

promise, but communication scholars have a long way to go in fully understanding use of the Internet.

APPENDIX

Appendix

Appendix Table - Number of Responses per Variable

Appendix

Appendix Table - Number of Responses per Variable

Variable	N		Variable	N
Act - Browse/surf	161		ug - entertained	164
Act - e-mail	161		ug - escape	168
Act - entertainment	160		ug - everyone else does	165
Act - gen info	161		ug - excitement	167
Act - Learning	160		ug - exp. things I can't	163
Act - nwsgrps/IRC	161		ug - fantasy	164
Act - play games	161		ug - feel good	167
Act - prod info	160		ug - feel important	166
Act - Read mags	160		ug - find companionship	166
Act - Research Schl	161		ug - find new things	162
Act - Research Wrk	161		ug - find people	168
Act - Shopping	160		ug - gain status	165
Act - wrk on 'Net	160		ug - get advice	165
Age	160		ug - get immed knowledge	161
Comp time for fun	167		ug - get info	167
Frust - Bored	151		ug - get info	164
Frust - can't get on	154		ug - get info I can trust	164
Frust - Disconnected	153		ug - graphics & pages	162
Frust - Graphics slow	154		ug - graphics	168
Frust - novelty worn off	150		ug - habit	164
Frust - overrated	152		ug - have fun	162
Frust - same old	153		ug - info to pass on	162
Frust - Slow	153		ug - job ops	168
Frust - Slow dwnld	151		ug - keep learning	164
Frust - Trouble finding	153		ug - keep up with tech	163
Frust - trouble using	152		ug - learn to do things	168
Gender	163		ug - let people know me	168
Grade	163		ug - lrn about famous	164
How Learned	166		ug - make rsrv	163
Length known net	167		ug - meet new people	164
Location used	166		ug - more import in future	168
Marital	162		ug - new ids	168

Appendix Table (cont'd)

Own Computer	167		ug - new interests	168
Time Spent on 'Net	164		ug - news	167
Time spent surfing	155		ug - order prod srvs	168
Time use comp for wrk	167		ug - part of infohwy	167
ug - accepted for ideas	164		ug - pass time	168
ug - avoid	168		ug - play	167
ug - bc I should	162		ug - prod srv info	163
ug - be cool	162		ug - publish	168
ug - be informed	165		ug - read hm pgs	163
ug - boredom	168		ug - relax	163
ug - career	168		ug - sights & sounds	167
ug - deliver info	166		ug - stay in touch	168
			Why surf	155

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