
Portable social groups: willingness to communicate, interpersonal communication gratifications, and cell phone use among young adults

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Abstract: This study looked at young adult cell phone usage patterns. Results of a survey of 182 students at a large southern university revealed that respondents typically used their phones an average of 10.5 hours per week – the overwhelming majority of that with traditional calling. Features and services that were regularly utilised related to interpersonal communication. Limited support was found for the hypothesis that cell phone use may be utilised to avoid communication apprehension events. Stronger support was found for the hypothesis that interpersonal communication motives are positively correlated with cell phone usage gratifications.

Keywords: cell phone; mobile services; young adults; willingness to communicate; phone usage; mobile technology use.

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1 Introduction

Today's cell phones, which have penetrated a significant percentage of the US population, sport colour screens, games, internet access, e-mail and many other advanced 'third generation' (3G) features – as well as the ability to make 'portable' phone calls that we have all become so accustomed to. Along with this technology comes the opportunity to strengthen some interpersonal communication bonds while avoiding others. This study will look into the interpersonal gratifications obtained by young adults from cell phone use. It will also investigate how a person's willingness to communicate affects their cell phone use.

2 Review of the literature

2.1 Cell phones and '3G' service overview

The most recent report by Scarborough Research shows that national average penetration of cell phones in 2003 was 66% – a growth rate of over 30% since 1999, with even higher rates in larger cities (McFarland and Mongrain, 2003). Those who continue to avoid cell phone adoption tend to be older, more likely female, and will lower education and household income than 'haves' (Leung and Wei, 1999).

Time spent using cell phones appears to also be on the rise, but research has pointed out the disparity between self-report measures of cell phone use and real-time observance of usage levels (Cohen and Lemish, 2003). Although there were predictions of a small (9%) adoption rate among adults overall, the trend seems to be growth in the adolescent (12–17) and younger adult (18–24) segments of the market (Charny, 2002; McFarland, 2002; McVicker, 2001; Wrolstad, 2002). The youth market – currently with a penetration rate of only 25%, but growing fast – is considered a 'gold mine' of opportunities to increase flagging industry profits (Charny, 2002; McVicker, 2001).

Even as mobile phone penetration has increased in the USA, user demographics have changed. Women now represent the majority of US cell phone users. The mean age and income level of cell phone users has also declined over the years (McFarland, 2002; Robbins and Turner, 2002) – contrary to research done earlier in the adoption cycle of the cell phone and in other cultures (e.g., Leung and Wei, 1999). This may be a change in the trend of the adoption cycle as more recent studies have shown that usage is growing in technologically and economically challenged regions of the world, perhaps in part as a way to bridge previous communication gaps (Kamssu, 2005). The primary reason for use appears to have shifted from business to personal communication (McFarland, 2002; Robbins and Turner, 2002). Some research has found that this new mobile communication tool is reinforcing – rather than expanding – traditional roles of women as nurturer and of a 'weaker sex' that needs uses the cell phone as an additional means of protection (Rakow and Navarro, 1993).

Growth and penetration trends seem to lean toward younger potential customers. People most likely to fail to adopt cell phones now or in the future tend to be much older, have a lower education, and no children (Leung and Wei, 1999; Robbins and Turner, 2002). These trends become more pronounced when looking at potential users of advanced cell phone technologies – such as text messaging and internet access – that go beyond the confines of conventional voice communication (Robbins and Turner, 2002). Some research has also explored the potential use of streaming video and audio by cell phone consumers (Picard, 2005).

Prepaid phone cards have made it even easier for adolescents and young adults to obtain cell phone service, increasing the accessibility of cell phones to this demographic while alleviating the concerns of parents that their children will use excessive amount of minutes resulting in an extremely high bill at the end of the month (Ling and Yttri, 2002). Limited adolescent finances appear to have also resulted in their making strategic communication choices such as using 'nighttime' minutes and 'free' in-network calling.

2.2 *Adolescent and young adult use of cell phones*

Research has shown that adolescents and young adults use the cell phone differently than their parents and other older users. They prefer to consider it their primary phone – in lieu of the traditional landline phone – for its portability. Portability also translates into additional privacy since personal calls can be made away from authority figures (Henderson et al., 2002; Ling and Yrtti, 2002). Use of Short Messaging Services (SMS) provide additional semi-private communication, allowing users to stay secretly connected to social groups. SMS are often saved and even shared in groups much like traditional letters (Kasesniemi and Rautiainen, 2002). The one-to-one nature of opt-in advertising, where users agree (usually via traditional websites) to allow SMS advertising to be sent to their phones may also be appealing (Leppaniemi and Karjaluoto, 2005). In fact, the continued growth and penetration of the subscriber based is creating an ever increasing demand for mobile advertising (Gopal and Tripathi, 2006).

A variety of instrumental and ritualistic gratifications have been found for adolescent cell phone use. Some studies have found little or no difference in use based on gender (e.g., DeBaillon, 2003; DeBaillon and Rockwell, 2005). Other studies have found, however that boys tend to be more intrigued with technical aspects of the devices, while girls tend to prefer the interpersonal connectivity – and spend more time using their phones for voice calls (Henderson et al., 2002; Rakow and Navarro, 1993; Skog, 2002). In fact, while women in one study felt the phones resulted in more freedom, male teens found the additional connectivity a constraining inconvenience (Skog, 2002).

Young adults have developed many instrumental uses of the cell phone including coordinating and scheduling with peers and interacting and keeping parents informed (Ling and Yrtti, 2002). In the latter case, two chief goals are to confirm safety and to arrange transportation. Ritualistic or expressive uses of the cell phone have been adopted by young adults as well. They rely heavily on cell phones to create and maintain their social image and affect their social penetration (Henderson et al., 2002; Ling and Yrtti, 2002). Form, features and appearance are all important aspects of this usage of cell phones – as well as keeping in contact with ones friends. Popularity is often ‘quantified’ by a full cell phone address book and/or many sent, received, and saved text messages (Henderson et al., 2002; Ling and Yrtti, 2002).

These characteristic usage patterns appear to be consistent across the variety of cultures in which cell phone use has been studied to date. However, they must be framed within an individual’s cultural context. In his qualitative and conceptual analysis of cell phone use by young women in the UAE, Barwind (2003) has observed that the technology isolates young women from the greater society while at the same time allowing young adults to speak more freely to one another than the culture might otherwise allow. He believes that this leads to a separation and individualisation that has both a positive and negative affect on users and their families. Leonardi (2003) found that US Latino citizens perceived the usefulness of communication technologies based upon their community’s cultural values. In the case of cell phones, the respondents surveyed found them to be an important and effective way to make interpersonal contact. In Turkey researchers found status, relaxation, security, and sociability all to be important motives of cell phone use (Ozcan et al., 2003).

Research has shown that usage patterns are constructed partially based on relationships within social groups. Campbell and Russo (2003) interviewed nearly 200 people and found 45 personal communication networks. Within each of these

communication ‘cells’ perceptions of use and utility of mobile phones was similar. These perceptions differed from small group to small group however.

Adolescent cell phone ‘haves’ and ‘have-nots’ sometimes mirror those of older demographics, but in many cases the decision is made by a parent rather than a potential user. Young adult ownership of a cell phone appears to be closely related to contact with one’s social peers. (Henderson et al., 2002; Leung and Wei, 1999; Ling and Yrtti, 2002). Adolescents who do not have cell phones often feel cut off from their peers. Young adults who strive for greater accessibility to friends and peers as they attempt to break the bonds of home and family circles, are more excited by the prospect of the instant availability that comes from cell phones (Ling and Yrtti, 2002). Accessibility is an important component of their social life, representing their status in their peer community.

The concept of instant accessibility brings with it the presumption that phone calls can interrupt – and in some cases occur simultaneously – with other interpersonal events such as attending classes, public events, and being at work. Many adolescents studied do not consider this an interruption of these more traditional events (Ling, 1998; Ling and Yrtti, 2002). Indeed, respondents questioned admitted to leaving their phones turned on even during situations that it would be impolite or inappropriate to interrupt (Ling, 1998). This invasion of private communication into public spaces has also led to an erosion of boundaries regarding topics discussed in front of strangers. Public and private spheres merge as individuals walk down the street talking to close friends or family on the cell phone – allowing strangers to easily overhear one side of conversations that used to be considered private talk (Henderson et al., 2002). In addition to observable interruptions of potential interpersonal events – such as talking to someone on the cell phone while standing in line at the bank – adolescents participate in concealed use of the phone that interrupts or prevents interpersonal communication events – such as text messaging someone while sitting in a classroom (Ling, 1998; Ling and Yrtti, 2002).

2.3 Cell phone use and perception of self

Study of how the public feel – or ‘folk framing’ – about cell phones suggests that the average member of society, whether a cell phone user or not, has mixed feelings about this liberating technology (Katz and Aakhus, 2002). Cell phones are considered to be devices that free up people from constraints of landline telephones – allowing one the flexibility of mobility, while still being able to access family, friends, co-workers, and the services of the community. In fact, they are often considered time saving devices since they allow users to more effectively manage limited available time. On the other hand, cell phones are considered the bane of the 21st Century, preventing the user from being able to get away from the office or avoid unwanted communication. This results – in the minds of many ‘folk’ – in a perceived loss of control over one’s life (Katz and Aakhus, 2002). It has been argued that the debate over cell phones represents a greater struggle with changes in societal norms of communication and interaction. In fact, Hopper (1992) has noted that the challenge of controlling access to one’s self can directly affect innovation.

Cell use, as well as the size and style of phone carried by a user, symbolises a variety of diverging meanings to different members of the public. It can represent safety, accessibility, ‘coolness’ of personal public image. Cultural and generational barriers exist in some cases that perceive this connectivity as negative (Robbins and Turner, 2002).

Researchers and society alike are aware that there will be an evolution in public and dyadic relationships as the cell phone permeates all areas of our lives (Fortunati, 2002; Robbins and Turner, 2002). de Gournay (2002) sees an evolution of personal talk subverting and pushing out formal conversation. 'Micro-behaviour' on the cell phone expands the bubble of a person's informal conversation so that it encompasses the person and shields them from external communication with others interpersonally. Nafus and Tracey (2002) believe that the cell phone affects one's perception of 'personhood'. They suggest that the cell phone is central to communication negotiations regarding morality, efficiency, productivity, and ultimately independence. Fortunati (2002) sees the mobile phone phenomenon as not only changing how society communicates, but even affecting our societal framework regarding how we define what is acceptable in 'social spaces'.

Gergen (2002) espouses the theory of absent presence, whereby someone banishes another socially from an event – essentially ignoring them as if they were absent even though they are present. The banisher relegates the person to second or third class status behind involvement in a TV show, video game, cell phone conversation, etc. Given that the cell phone results in another mediated interpersonal event, he sees this as a strong method of making others absent from local interpersonal events. Gergen (2002) speaks of the cell phone user as one with the power to create a secure environment – a security bubble if you will – of friends and family accessible by cell phone that shield the individual from less desirable direct interpersonal contacts with new individuals and in new environments. He sees that these new and 'causal' interpersonal events are disrupted and often prevented by the expansion of the individual's protective security bubble – something perhaps more appealing to shy individuals who do not relish getting involved in new interpersonal encounters. This could afford the cell phone user a great deal of power in controlling their personal comfort zone, a tool that would be extremely useful for individuals that suffer from communication apprehension.

2.4 Interpersonal communication apprehension

In the field of interpersonal communication, many researchers have studied communication comfort from a variety of different approaches including reticence, social anxiety, talkativeness, shyness, communication competence, for over 70 years. These related constructs generally fall under one of three umbrella approaches, communication anxiety or apprehension, talking frequency, and approach/avoid preferences (McCroskey, 1992).

Communication apprehension is a form of anxiety that develops when one considers whether or not to communicate in various situations (Burgoon, 1976). Called reticence by some researchers, this characteristic represents a situation where a person's anxiety about a communication event outweighs perceived benefits from participating in the event (Phillips, 1968). Reticence may be situation-specific, however some individuals are more generally and globally apprehensive than others.

An individual who is apprehensive or reticent about a communication event will do whatever is necessary to avoid the event – and if forced to remain in the situation will become unusually quiet. Apprehensive individuals are hesitant about expressing ideas and problems, are not willing to support their opinions if challenged, and interpret general comment as personal criticism (Phillips, 1968; Phillips and Metzger, 1973).

The most direct approach to analysis of communication anxiety or reticence has been personal report of willingness to communicate (Burgoon, 1976; McCroskey, 1992; McCroskey and Richmond, 1987). A number of surveys have been developed allowing for self report of this willingness to communicate. One very strong entry is the 'Willingness to Communicate Scale' which has shown high levels of reliability and validity (McCroskey, 1992; McCroskey and Richmond, 1987). The 20 item measure consists of eight filler items and 12 actual items. The latter provide the ability to determine overall level of willingness to communicate as well a situational levels of willingness to communication depending upon the event (public, meeting, group, dyad) and the level of closeness the respondent has to others at an event (stranger, acquaintance, friend).

2.5 Uses and gratifications

The uses and gratifications model can help to explain why people choose a certain technology or service, how they use it, and what outcomes they feel they have gained from the experience. The presumption is of an active and aware user group that evaluates something like cell phone service for its potential ability to meet predetermined needs (Blumler, 1979; Palmgreen et al., 1980; 1981). Users have the capability of making up their own minds about the messages being sent and received, and the extent of their gratification is dependent on the cultural and social origins of their needs (McQuail et al., 1972).

While most research in this field relates to gratifications sought and obtained from mass media consumption, there are offshoots of this approach that do look at interpersonal communication gratifications as well as technologically mediated interpersonal communication gratifications.

2.5.1 Interpersonal gratifications

Rubin et al. (1988) developed a scale to measure the motives or gratifications of interpersonal communication. Six key gratifications were found to motivate interpersonal communication decisions: pleasure, affection, inclusion, escape, relaxation, and control. They found that respondents who were more apprehensive about interpersonal communication were more likely to use interpersonal communication for inclusion motives and not so much the other gratifications. On the other hand, respondents who were less apprehensive about interpersonal communication primarily involved themselves in interpersonal communication for affection, pleasure, and control.

The management of interpersonal communication situations and needs is on category of gratifications that are obtained by mass media and mediating technology use. Researchers have found that media and technology are sometimes used in order to avoid interpersonal events – allowing the avoiders to 'hide behind' the TV, computer screen, video game, or cell phone (e.g., Gergen, 2002; Katz et al., 1974; Lull, 1980; Wenner, 1976). When direct interpersonal communication is unavailable – or anxiety over such communication is perceived as too high – mediated interpersonal communication and immersion into mass (parasocial) communication – has been used as a functional alternative to interpersonal communication (e.g., Ling and Yttri, 2002; Rosengren and Windahl, 1972; Rubin and Perse, 1987; Rubin et al., 1985; Wenner, 1976). Mass communication and technologically mediated interpersonal communication are also

used for relational maintenance – allowing participants to gain information to discuss in their interpersonal communication experiences as both topics of conversation and also to give them an informational advantage that enhances control of the situation (e.g., Chaffee, 1986; Dimmick et al, 1994; Ling and Yttri, 2002; Ryan et al, 1998; Wei, 2001; Wenner, 1976).

2.5.2 Gratifications from cell phone use

Although there are many media gratifications research studies, there are a relatively limited number of studies that have attempted to investigate telephone or cell phone users' gratifications.

A few studies of the traditional telephone have been performed. Dimmick et al. (1994) found reassurance, sociability (ritualistic) and instrumental gratifications sought by phone users. In another study (Ryan et al., 1998) younger adults were found to use the household telephone more frequently than older adults and emphasised sociability and instrumentality and deemphasised reassurance.

In one of the first published study of cell phone use gratifications, Leung and Wei (2000) found that mobility, immediacy, and instrumentality are the strongest instrumental motives for cell phone use while intrinsic factors such as affection and sociability are next most important. Use of cell phones in traffic and in public locations is strongly linked to the mobility and immediate access gratifications. Cell phones are used for business calls (instrumental) as well as personal (ritualistic motives). In a related study of adoption of cell phones by laggards (Wei, 2001) it was found that in Hong Kong, socioeconomic status and social influences were the key predictors of cell phone adoption in 1998 and even in 2000 – although there were far fewer cell phone laggards in 2000. Cell phone laggards were also generally less technically savvy. Recent uses and gratifications studies performed within a variety of cultures have – for the most part – confirmed these findings (e.g., DeBaillon, 2003; DeBaillon and Rockwell, 2005; Kasesniemi and Rautiainen, 2002; Leonardi, 2003; Ling and Yttri, 2002; Ozcan and Kocak, 2003; Skog, 2002; Wei, 2001).

There are no published works looking at the predictors of using enhanced cell phone services and features (such as web access, e-mail, and file download). However, a study published by Papacharissi and Rubin (2000) looked at gratifications obtained from internet use – features and services much like (although arguably more rich than what is available) those on third generation cell phones. They found five motives for using the internet suggesting distinct difference between instrumental and ritualised use. Further, they saw the internet as a functional alternative to face-to-face communication. Leung (2001) looked at the gratifications of ICQ, one brand of instant messenger service. He found that instrumental and intrinsic (ritualistic) motives for instant messaging were all important motives for utilisation of this internet service. Similar to some cell phone research, Leung also found that women tended to utilise the service more for socialisation while men accessed it more for entertainment and relaxation.

3 Hypotheses and research question

Given the growth in cell phone use and the development of enhanced features and services, it is important to understand how and to what purpose young adults use their phones. This leads to the first two research questions posed in this study.

RQ1: What are the basic cell phone usage levels of young adults?

RQ2: What cell phone services and features are young adults most interested in using?

Research has shown that an individual's discomfort with a given communication situation may result in behaviours that would reduce the chances of conversation were such an interpersonal event be unavoidable (cite). It has been suggested that cell phone conversations not only make ones preferred partners 'portable', but also acts as a shield against unwanted face-to-face exchanges (e.g., Burgoon, 1976; Phillips, 1968; Phillips and Metzger, 1973; McCroskey, 1992). These proposed attributes of cell phone use suggest the first hypothesis.

H1: Willingness to communicate in interpersonal situations will be negatively correlated with time spent using a cell phone.

Prior research suggests that interpersonal communication remains the most popular function of cell phone use. Motives for interpersonal communication are many and varied (e.g., Rubin et al., 1988) – just as are the gratifications obtained from cell phone use (e.g., Leung and Wei, 2000). If cell phones are substituting as functional alternatives to interpersonal communication – or if they are being used to enhance and expand interpersonal networks, then many of the gratifications obtained by cell phone use will mirror those derived from interpersonal communication.

H2: Motives for interpersonal communication will be positively correlated with gratifications obtained from cell phone use.

4 Method

Seven sections of an Introduction to Mass Communication course at a large southern university were surveyed in the Spring and Fall of 2003. This sample was chosen because it offered an excellent representation of the population under study – young adults. Additionally, this freshman/sophomore-level course is widely taken by students throughout the university as a general studies course and represents students in majors throughout the university as well as offering demographic diversity. Over 180 students in the sections volunteered to anonymously participate in the study in exchange for course extra credit.

Instrument

Respondents were asked how much time they spent weekly using their cell phone in various situations (e.g., daytime vs. nighttime). They were also asked about their awareness of, access to, and usage of 42 features and services available on individual cell phones or though service plans provided by their carrier. (Although usage of built in

alarm and calendar features were mentioned, usage of a built in clock was inadvertently left out). Additional survey items tapped the following issues: an individual's willingness to communicate in various interpersonal situations; their interpersonal communication motives; an index of gratifications obtained from cell phone usage; and an index of gratifications obtained from use of enhanced cell phone services (e.g., web browsing and file downloading). Finally, basic demographic information was also requested. Quantitative data was analysed with the Statistical Package for the Social Sciences (SPSS).

Time spent using their cell phone

Respondents were asked to estimate how many minutes per week they use their cell phones for three types of use: voice calls (and voice mail), enhanced services that expend monthly usage minutes (e.g., text messaging, downloading files, internet access), and activities that do not expend monthly usage minutes (e.g., built-in games, phone book, etc.). Because usage plans are somewhat complex and usage patterns will directly affect a customer's bill, these questions were broken down into separate items that tapped usage during limited 'daytime' minutes, daytime use that does not count against daytime minutes (e.g., plans that allow family share, unlimited cell phone to cell phone calling, or free access to customer service), and expanded (and often unlimited) night and weekend periods.

Service and feature use

A review of the services and features offered by the major cell phone companies and on the handsets of the most popular phones generated a list of 42 unique options and benefits from cell phone use. Respondents were asked to reply to each item based on the following ordinal-level scale:

- 1 Do not have and not interested
- 2 Do not have but interested in getting
- 3 Do not know if I have it
- 4 Have but never use
- 5 Have and use a few times a month
- 6 Have and use a few times a week
- 7 Have and use a few times a day
- 8 Have and use all the time.

Responses were reviewed to determine preferred features and benefits of cell phones to this group.

Willingness to communicate

Respondents' comfort level participating in various interpersonal communication situations was measured by McCroskey and Richmond's (1987) Willingness to Communicate Scale. Subjects are asked to indicate the percentage of time they would choose to communicate in each of 20 unique situations. Eight of the 20 items are fillers. The remaining 12 items can be used to provide information on a respondent's

willingness to communicate in general. Subscores can be obtained based on three types of receivers – stranger, acquaintance, friend – and on communication context – public, meeting, group, dyad (McCroskey, 1992; McCroskey and Richmond, 1987).

Interpersonal communication motives

A 28-item likert-type measure developed by Rubin et al. (1988) was used to explore interpersonal communication motives. The scale taps six unique motives for interpersonal communication: pleasure, affection, inclusion, escape, relaxation, and control.

Gratifications obtained from cell phone use

Leung and Wei (2000) performed a study of the gratifications from cell phone use among citizens of Hong Kong. They developed a 28-item scale that represented seven unique factors: fashion/status, affection/sociability, relaxation, mobility, immediate access, instrumentality, and reassurance. Subjects in the current study responded to each of Leung and Wei's items based on the likert-type options: strongly agree, agree, no opinion, disagree, strongly disagree.

Gratifications obtained from use of enhanced cell phone features and services

While only limited research has been published to date on cell phone use, no research as yet focus on usage of the many enhanced features now available to most cell phone users. These features include, file and image transfer, e-mail, text messaging, and internet access. It was felt that gratifications obtained from such features and services are most similar to those obtained by internet users. Papacharissi and Rubin (2000) developed a 27-item scale that measured internet usage motives. Factor analysis of the survey resulted in five unique motives: interpersonal utility, pass time, information seeking, convenience, and entertainment. This scale was adapted for the current study to assess motives for use of enhanced or third generation (3G) cell phone features and services.

Demographic information

In addition to other survey items, questions were included that assessed basic demographic information including age, gender, race, US citizenship, marital status, dependents, and grade level.

5 Results

5.1 Summary data

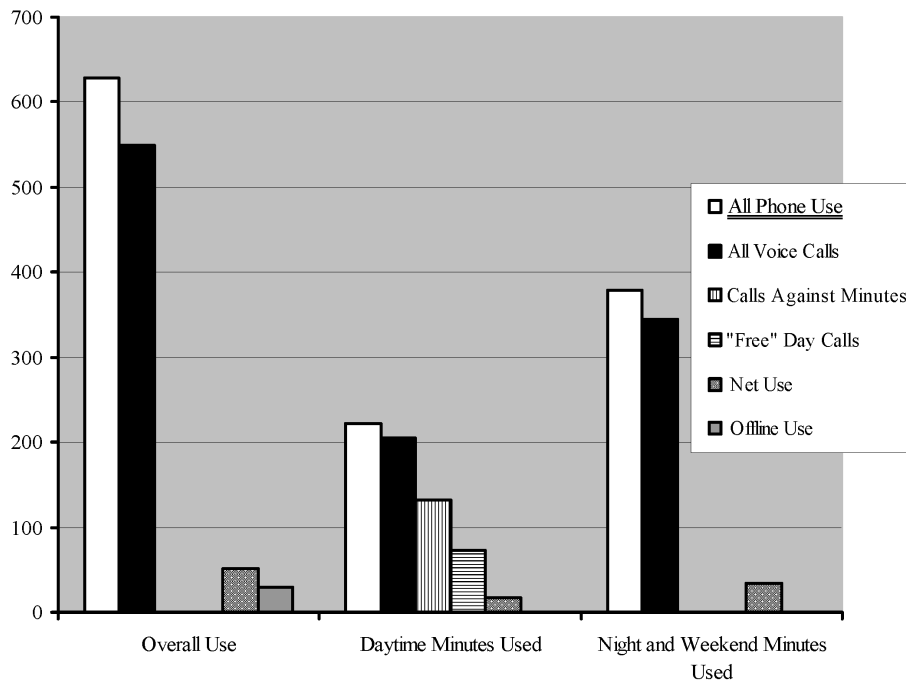
Results consisted of 182 usable survey replies. Respondents were approximately 20 years old, plus or minus a few years – although one respondent reported an age of 44. Nearly all of the sample reported themselves as single, never married ($N = 171$, 95% of the sample). The majority were female ($N = 119$, 65.7%), US citizens ($N = 177$, 98.3%), and had no children ($N = 164$, 91.1%). Slightly less than three quarters of the sample were Caucasian ($N = 127$, 70.2%) and one quarter were African American ($N = 45$, 24.9%).

5.2 Research questions and hypothesis

RQ1: What are the basic usage levels of young adults?

Based on respondent estimates, users spent an average of 629 minutes (about 10.5 hours) per week using their cell phone on or off line for any reason. The vast majority of this time (600 minutes or 95.4%) was spent using the phone ‘online’. This included an average of 549 minutes/week (87.3% of total time spent using the phone) for voice calls, 51 minutes/week for online ‘net services’ such as checking e-mail or web surfing (8.1%), and 29 minutes/week for off net/line activity – utilising built in apps. such as address book and built in games (4.6%). See Figure 1 for a graphical breakdown of cell phone minutes used.

Figure 1 Weekly usage in minutes of cell phones for various reasons



Of the 600 minutes per week that respondents used their phone for voice calling and other services that require connection, about one third of those were during the day ($N = 222$, 37.0% of all connection time). However, 73 minutes per week were ‘free’ in that they did not count against the limited plan minutes (e.g., to customer service or among phones on a shared plan). The remaining minutes used during the day ($N = 149$) did count against ‘daytime’ minutes (or as referred to by the cell phone companies ‘anytime minutes’), which typically come in fixed amounts with significant surcharges enacted when a user goes over the monthly allotment. The majority of that, 132 minutes (slightly over two hours) was spent on the phone making calls and checking voice mail each week – a bit more than the average monthly contract would allow. A very small amount, 17 minutes per week, were used for various non-call uses (e-mail, internet, text messaging).

With many plans, night and weekend minutes are unlimited – or offered in much larger allotments. Consequently, all types of use that require a connection rose. Respondents used their phones 156 minutes per week more on nights and weekends than during daytime ($N = 378$ minutes). Since most plans have virtually unlimited night and weekend minutes, respondents were not asked to differentiate between types of voice calls. The vast majority of this use – about 5 and 2/3 hours – was for voice calls ($N = 344$, or 91.0% of night and weekend connected use). Even on nights and weekends, only 9% of connected time ($N = 34$ minutes) was spent on other uses.

Respondents spent an additional 29 minutes per week using their phone ‘offline’ – accessing the address book or calendar, playing built in games, etc. – which of course does not count against any plan minutes.

RQ2: What cell phone services and features are young adults most interested in using?

Responses to interest in each of the 42 cell phone services and features were averaged across respondents for comparison. Interest in features ranged from a possible low of one (no interest at all) to a high of eight (significant interest and utilise many times a day). Table 1 shows the breakdown of interest in various features and services.

Table 1 Preference for cell phone features and services

<i>Service or feature</i>	<i>Mean score</i>
Caller ID	7.36
Cell phone itself (using it)	7.32
Ringtones and music built in	6.37
Call waiting	6.18
Unlimited night and weekend minutes calling plans	6.01
Voice mail	5.91
Free long distance	5.43
Alarm feature	5.37
Text messaging	5.27
Built in address book	5.19
Games built in	5.12
Misc apps. built in (e.g., calculator and world clock)	4.78
Assignable ringtones	4.69
Instant messaging	4.60
Free customer service	4.41
Extended warranty on phone	4.08
Directory assistance (e.g., similar to ‘411’)	3.98
Call forwarding	3.95
Call screening through ‘answering machine’ built into phone	3.92
Built in calendar	3.78
Three-way calling	3.75

Table 1 Preference for cell phone features and services (continued)

<i>Service or feature</i>	<i>Mean score</i>
Free calling to similar phones (e.g., PCS 2 PCS or within family)	3.69
Voice dialing	3.62
Files downloaded directly from internet into phone	3.57
Numeric paging	3.38
Voice memo recorder	3.29
Colour screen	3.02
E-mail (on phone and/or check other accounts)	2.99
Roadside assistance plan	2.85
Shared minutes among family phones	2.81
Wireless internet on cell phone	2.66
International calling plan	2.57
Locator feature (If turned on allows network to 'see' you.)	2.49
Picture caller ID (a specific picture comes up when a person calls)	2.43
Infra red technology (to beam files from phone to other devices)	2.23
Unlimited daytime minutes plan (often cost much extra)	2.12
Third generation wireless web (e.g., colour, faster net connections)	2.03
Connect to PC with cable to download files into phone	1.90
Chatting in groups via phone	1.85
Built in (or attached) camera	1.84
Connect to PC with cable to use as modem for PC	1.79
Connect to PC with cable in order to sync address book	1.71

Responses are based on the following scale:

- 1: Do not have and not interested.
- 2: Do not have but interested in getting.
- 3: Do not know if I have it.
- 4: Have but never use.
- 5: Have and use a few times a month.
- 6: Have and use a few times a week.
- 7: Have and use a few times a day.
- 8: Have and use it all the time.

Despite the addition of many new high-tech features, the primary uses for cell phones are call screening (via caller ID), and voice calls. These were the only two items that ranked at the level of 'Have it and use it daily'. Ringtones, call waiting, and unlimited night/weekend plans ranked next at a level of regular weekly use. Voice mail, free long distance, alarm, text messaging, and built in applications were only used on a monthly basis by this sample. Everything else was seldom used, and in some cases the respondents did not know if they even had this feature. Many of the higher tech features were of no interest to this group.

H1: Willingness to communicate in interpersonal situations will be negatively correlated with time spent using a cell phone.

Hypothesis one was partially supported. In situations when 'free daytime minutes' were considered. In that circumstance, the less willing someone was to communicate overall, the more likely she or he was to spend time on the cell phone ($r = -0.14, p = 0.061$). The relationship was stronger – and in the same direction – for the subscale of willingness to communicate in a group situation ($r = -0.16, p = 0.031$). These predictions were not supported, however, for regular daytime minutes nor for night and weekend minutes. It appears that interpersonal communication apprehension is a significant predictor of daytime minute use, but only if the minutes will not result in additional cost to the user. It is also important to point out that 'in-plan' persons are more likely to be people that the individual knows intimately and would prefer to talk to in lieu of participating in an uncomfortable face-to-face communication experience.

Interestingly, usage of the phone evenings and weekends for online services (not voice calls) was *positively* correlated with WTC in meetings ($r = 0.13, p = 0.096$) and dyads ($r = 0.13, p = 0.083$). This could be because people who are more willing to communicate in groups enjoy the text, instant message, and chat features of their phones.

H2: Motives for interpersonal communication will be positively correlated with gratifications obtained from cell phone use.

Overall, this hypothesis was strongly supported. Interpersonal communication motives were positively correlated with both regular cell phone gratifications ($r = 0.43, p < 0.001$) as well as gratifications obtained from enhanced services ($r = 0.34, p < 0.001$). These high correlations with the overall measures of cell phone and enhanced gratifications suggest that cell phone use goes a long way in fulfilling the interpersonal communication needs of young adults. Both positive and negative correlations showed up when looking at the individual IPC motives and cell phone usage gratifications. Negative correlations appear to be logical since they occurred in instances where an individual IPC motive may run counter to an individual cell phone use gratification.

The IPC motives of affection ($r = 0.17, p = 0.029$) and inclusion ($r = 0.13, p = 0.085$) were positively correlated with the cell phone gratification labelled reassurance. Control was positively correlated with the cell phone gratification labelled immediate access ($r = 0.15, p = 0.048$). Not surprisingly, the IPC desire for relaxation was positively correlated with the cell phone gratification of relaxation ($r = 0.14, p = 0.067$). One enhanced service cell phone usage gratification appeared to aid in the fulfilment of many IPC motives. Passing time positively correlated with the IPC motives pleasure ($r = 0.16, p = 0.043$), relaxation ($r = 0.13, p = 0.097$), and control ($r = 0.18, p = 0.020$).

There were several negative correlations between IPC motives and cell phone gratifications. Relaxation was negatively correlated with the cell phone gratification of affection/sociability ($r = -0.15, p = 0.045$) – perhaps due to the intrusive nature of cell phones. The IPC motive of control was negatively correlated with the cell phone gratification of relaxation ($r = -0.21, p = 0.007$). The IPC motive of inclusion was negatively correlated with the enhanced service mode of passing time ($r = -0.17, p = 0.029$). And the IPC motive of pleasure was negatively correlated with information seeking ($r = -0.14, p = 0.084$).

6 Discussion

Although researchers have found that younger cell phone users tend to use their phones more and in more ways than older users, the group under study in this project clearly used their phones predominantly for voice calls. While usage levels are high – approximately 1.5 hours per day – users do appear to be generally aware of the costs involved in cell phone use and tend to predominantly call when the minutes are not counted against the limited daytime allotment. Still, with this much daily use, the cell phone appears to be a particularly important component of young adult interpersonal communication.

The particular features preferred by this group support this supposition. Far and away the most commonly used features involve traditional calling and caller screening. Playing with ringtones is the only non-voice feature that students play with weekly. Although this study did not investigate that response, prior research suggests that this may be done as an interpersonal fashion statement among one's face-to-face peers. Despite the fact that cell phone companies have put great emphasis on developing enhanced features including picture mail (and now even video mail, unavailable during the study), most respondents either did not have phones that supported these services or had little or no awareness of these features. Only text messaging, and several built-in apps (games, address book, alarm) were utilised even a few times a month.

Willingness to Communicate appears to be complexly related to cell phone use. Generally speaking, it appears that the less comfortable one is communicating face to face with people, the more likely one may use the phone instead – perhaps as a shield. That relationship appears to only hold up if the minutes used on the phone to avoid real world conversations are 'free' minutes. This situation seems to be most pronounced when the individual is attempting to avoid group communications. Still, apprehension is not as strong an influence on behaviour as a desire to save costly precious 'daytime minutes'.

Interestingly, but perhaps not surprisingly, the more one is willing to communicate in meetings or dyads, the more likely one is to utilise the phone evenings and weekends for online services (not voice calls). These uses would probably include instant and text messaging along with chat services like the one available to Spring PCS customers. These types of uses may allow highly social people the opportunity to 'stay connected' to groups even while they are at home or in other less social settings. Cell phone use can mitigate communication apprehension and offer additional opportunities to connect with others when one is isolated.

It is clear that gratifications obtained from cell phone use are strongly related to traditional interpersonal communication motives – most notably, affection, inclusion, and situational control. Pleasure, relaxation, and control are also related to using the phone to pass the time. Negative correlations occur when a cell phone gratification is in conflict with an IPC motive. This may be evidence of the intrusive nature of the devices that so annoys some users and bystanders.

With the increasing diffusion of cell phones in society, peer groups – one's 'friends and family' are now portable – nearly always available at a moment's notice. This increased communication access means that one is always connected to those who are closest. The strong overall correlation between interpersonal communication motives and cell phone gratifications fits in well with reported usage patterns and feature preferences. In total, a picture begins to develop of cell phone use as a method of both enhancing interpersonal communication and serving as a functional alternative to it.

Future research should address amount of time spent in face-to-face communication among cell phone users and non users.

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