

Social Phenomena of Mobile Phone Use: An Exploratory Study in Taiwanese College Students¹²

Yi-Fan Chen

**School of Communication, Information, and Library Studies
Rutgers, The State University of New Jersey**

yfchen@scils.rutgers.edu

Abstract

With the dramatic increase in mobile phone usage in recent years, reports of mobile phone addiction have come in public use. While researches on other media addictions have been published, mobile phone addiction is rarely understood.

Although scholars have examined in detail how heavy uses of certain media adversely affect students' academic performances, little is known about how mobile phones usage relates to academic performance. For most young people in Taiwan, a country with a high density of mobile phone users, using a mobile phone to network with family and friends has become a daily routine. This exploratory study examines the relationship between mobile phones use, mobile phone addiction, social capital, and academic performance in Taiwanese college students. This study seeks to determine the relationship between mobile phone addiction and depression among

¹ The author thanks Dr. James E. Katz at Rutgers University for his advice with this study.

² An early version of this paper was presented at the Second International Conference on Digital Communication Conference of the National Chung-Cheng University, Chia-Yi, Taiwan.

college students in Taiwan, the relationships among mobile phones usage, mobile phone addiction, and social capital, and finally, the relationships among mobile phone addiction, mobile phone usage, and students' academic performance.

An online survey was designed and administered to 166 Taiwanese college students. The results showed there were no significant relationships between mobile phone addiction and depression in the sample. Heavy mobile phone users reported better relationships with their friends and family. Heavy mobile phone users also reported that frequent use of their mobile phones adversely affected their academic performance and learning, whereas light mobile phone users reported that their academic performance and learning were less negatively impacted by their mobile phones usage. However, respondents who were extremely heavy mobile phone users reported that their mobile phones positively affected their academic performance.

Keywords: Mobile phone use, social phenomena, Taiwan

[收稿]2005/12/26; [初審]2006/4/21; [接受刊登]2006/6/20

Introduction

Background

People worldwide have become increasingly enthusiastic in embracing mobile digital communications equipment (Katz & Aakhus, 2002). From a laptop connected to the Internet via wireless fidelity (Wi-Fi) to personal digital assistants (PDA) to mobile phones, more and more people are communicating with each other from remote distances. Mobile phones in particular have helped to create this new world. Mobile phones, as Coghill (2001) comments, are “the most radiative domestic appliance ever invented” (p. 28). They provide a variety of functions that touch upon every aspect of social life (Katz & Aakhus, 2002). More than one out of six people worldwide now have mobile phones (Katz, 2005) and for many people the mobile phone has become an essential part of everyday life.

With the proliferation of mobile communication technologies, communication scholars have begun to question how these technologies are being, and might be, assimilated into people’s lives (e.g., Katz & Aakhus, 2002; Ling, 2004). In contrast to the already well-developed research of the Internet and its social impacts (e.g., Castells, 2001; Katz & Rice, 2002; Turkle, 1995; Young, 1998), studies of mobile phone usage and its social consequences are relatively few.

The purpose of this study is to examine the relationships between mobile phone users and the social consequences of mobile phone use among Taiwanese college students. An English language questionnaire (translated into several languages for future research) was developed to collect relevant data on issues relating to self-reported mobile phone usage, mobile phone addiction, depression, social capital, and academic performance. The results were then examined for three specific data sets: the relationship between mobile phone addiction and depression; the relationship between mobile

phone usage, mobile phone addiction, and social capital; and the relationship between mobile phone addiction, mobile phone usage, and students' academic performance.

This study of Taiwanese mobile phone use is part of a larger cross-national project at the Center for Mobile Communication Studies of Rutgers University that is examining mobile phone use and the social consequences it engenders. Researchers are attempting to discern patterns between mobile phone use and social phenomena in different nations.

College students were selected for this study because, according to Kandell (1998), college students tend to be more vulnerable to developing dependencies with regards to using information communication technologies (ICTs), such as the Internet (e.g., Kandell, 1998), to network with their friends and family. Possible reasons for this are that college students have yet to develop a firm sense of identity and have a strong desire to develop meaningful and intimate relationships. Palen (2002) comments that mobile phone use provides certain populations, including college students who often do not have fixed land-line telephones, with a new mode of communication.

Mobile phone addiction

As mobile phone use has dramatically increased in recent years, so too have the reports of mobile phone addiction. However, while there are many studies (e.g., Smith, 1986; McIlwraith et al., 1991; Young, 1998; Griffiths, 2000; Park, 2005) supporting the idea of media addictions to television (e.g., Smith, 1986; McIlwraith et al., 1991) and the Internet (e.g., Young, 1998; Griffiths, 2000), research on mobile phone addiction hardly seems to exist.

The criteria used to determine media addiction include a "craving or compulsion, loss of control, and persistence in the behavior despite accruing adverse consequences" (Shaffer, Hall & Bilt, 1999, p. 162). A few of these adverse effects include isolating their users from others (e.g., Kraut,

Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998; Bull, 2005), deleteriously effecting their users' finances, turning their users into criminals (e.g., Ross, 2001; "Mobile phones becoming," 2003), and negatively impacting academic performance (e.g., Kubey, Lavin, & Barrows, 2001).

Some psychiatrists believe that mobile phone addiction is no different from any other type of addiction (e.g., drug, the Internet) and that mobile phone addiction has become one of the most prevalent non-drug addictions ("Mobile phones becoming," 2003). Several scholars (e.g., Wikle, 2001; Park, 2005) have reported that some users are more dependent on their mobile phones than they themselves are aware. Wikle (2001) states that Americans have an "obsession" with having their mobile phones with them at all times. A similar pattern has also been reported among the French (Licoppe & Heurtin, 2001). Park (2005) argues that these are signs of a heavy dependency.

Theory

The major theoretical framework of this project is Ball-Rokeach and DeFleur's (1976) media dependency theory. This theory explains people's dependence on certain forms of media to get information, in both everyday, daily life and in crisis situations, and how this preferred media becomes more important to the user than other forms. Unlike other mass media theories (e.g., cultivation theory; modeling theory) that demonstrate the cause and effect relationships between media and their audience, media dependency theory argues that the individual does not depend on all media equally (Ball-Rokeach & DeFleur, 1976).

Mobile communication theorists (e.g., Gergen, 2002; Sugiyama & Katz, 2003; Bull, 2005) argue that people use their mobile communication technologies to explore (e.g., make new friends; create new communities) and to enhance (e.g., keep in touch with friends and family) as well as to

isolate (e.g., disconnect themselves from others) their social capital. “Social capital” is defined by Putman (2000) as the collective value of all social networks and the inclinations to do things for each other that arise from these networks.

In this study, media dependency theory will provide a framework for demonstrating how college students depend on mobile phones to get information or support from family and friends. This study also attempts to investigate whether college students believe that mobile phones are necessary to maintain and build social capital on campus.

Mobile phone use in Taiwan

Taiwan was selected for this study because it has the world’s highest density (i.e., 106.5%) of mobile phone users, a status that the country achieved in 2002 (“ITU digital access index,” 2004). Many individual Taiwanese own more than one mobile phone. Taiwan’s mobile phone subscription rate has seen phenomenal growth. At the close of 2002 there were 23.9 million subscribers and less than a year later, at the end of September 2003, that figure had risen to 25.3 million, with the penetration rate at 113% (“FIND”, 2003).

Compared to mobile phone studies of other high-density countries (e.g., Japan; Norway), Taiwan has yet to receive serious attention from communication scholars. For most young people in Taiwan, using mobile phones to network with friends and keep in touch with family has become a daily routine. In short, mobile phones have become one of the most important communication tools in Taiwan.

Literature Review

Mobile phone usage and addiction

Three characteristics of mobile phone addiction have been articulated by Roos (2001). The first is that people who are addicted to mobile phone always keep their mobile phones on. The second is that they tend to use their mobile phones even when they have a land-line phone at home. Finally, they normally are confronted with financial and social difficulties due to their excessive mobile phone use.

Although studies in mobile phone addiction are rare, reports that relate heavy mobile phone use are available. Park (2005) noted that Korean college students reported that they depend on their mobile phones to manage, or to compensate for, their mood (e.g., some Korean college students used their mobile phones as depressants). Those students who reported that they were habitual mobile phone users also reported that they were lonely. The students also felt highly anxious and irritated if their mobile phones were not available when they wished to use them. This data shows that there are troubling signs of mobile phone addiction among Korean college students.

In the Rutgers cross-national project, three non-randomly sampled American surveys were conducted in the spring of 2004. Paper-and-pencil surveys were distributed to 518 American undergraduates, of whom 53.4% were female. 60% had owned their mobile phone for more than three years. The results showed patterns of mobile phone addiction with a significant statistical difference between gender and self-reported mobile phone addiction (alpha sig. of 0.01). Female respondents indicated mobile phone addiction more than male respondents. The results also showed a trend that the longer the respondents owned their mobile phones, the less addicted they reported themselves to be (Chen, 2004).

Other findings indicated that there was a pattern between mobile phone addiction and depression among the sample. Self-reported mobile phone addiction was positively associated with participants' depression. Female participants reported significantly higher addiction effects than males (Chen, 2004).

Mobile phone usage and social capital

Mobile phones have revolutionized how people operate within their social networks. Mobile phones not only increase the pace and efficiency of life, but also allow for more flexibility in personal interactions. Many European researchers (e.g., deGournay, 2002; Ling & Yttri, 2002; Johnsen, 2003; Licoppe, 2003) have demonstrated that people actively use mobile phones to connect with their friends and family. Scholars (e.g., Johnsen, 2003; Licoppe, 2003) have also found that mobile phone use establishes and nurtures connections among close friends and family. Katz and Aakhus (2002) have commented on a similar pattern that occurred with the introduction of fixed wire line telephones in the early 20th century and the Internet in the 1990s.

Some ICTs (i.e., mobile phones and the Internet) are perfectly suited to the ideology of an individualistic society committed to networking (Castells, 2001). The mobile phone allows individuals to be apart from, yet maintain a continuous presence with, family, friends, and colleagues (Gergen, 2002, 2003). One study reported that American parents initially viewed mobile phones as a way of staying in contact with their children throughout the day, whereas American their children, in addition to using mobile phones to connect with their parents, used them as a way to create their own world outside the family (Mouchard, 2003). Similarly, Ling (2004) reported that European youths are more likely to use mobile phones to build their social networks than contact their parents. Taylor and Harper (2001)

also found that mobile phones provided British young people with a means to facilitate their social capital.

In the Rutgers project, American heavy mobile phone users reported that they had a better relationship with their friends and parents after they began using mobile phones. Respondents were asked to elaborate upon the following statement, “I really need to have a mobile phone to keep up with my family.” The answers indicated significant positive relationships among the sample. In addition, when asked to relate whether or not one agreed with the statement that they really need to have a mobile phone “to keep up with their friends,” the U.S. sample demonstrated significant positive relationships. Specifically, the heavy mobile phone users and the participants who self-reported mobile phone addiction agreed more than the others that they needed to have a mobile phone to keep up with their friends (Chen & Lever, 2005).

Mobile phone usage and academic performance

A part of this study was concerned with examining the relationship between mobile phone use and academic performance. Other scholars looking at different ICTs (specifically, the Internet) have suggested that the heavy use of technology for recreational purposes is highly correlated with reduced academic performance (Kubey et al., 2001). Respondents who reported Internet-caused schoolwork problems were found to have spent more than five times as much time online as those who did not report such problems. Additionally, respondents who reported Internet-caused schoolwork problems were also significantly more likely to report that their Internet use caused them to stay up late at night, get less sleep, and miss class.

It should be noted, however, that Southwick’s (2002) study found that Internet usage did not affect younger students as adversely as it did college

students. The researcher studied 1,333 sixth, seventh, and eighth graders from two middle schools. The findings suggested that students' Internet use did not affect their academic performance or their social involvement.

Mobile phones, an ICT that has become vital to many college students, may also potentially affect students' academic performance. A Management and Coordination Agency (MCA) survey of "youth trends" in Japan sought to examine Japanese students' attitudes and perceptions toward their mobile phones. As this survey was intended to see if mobile phone usage affected students' class work, the respondents were asked to self-rate their academic performance. The results showed that 68 percent of the students who answered that they received poor grades owned a mobile phone (Auckerman, 2001).

Methods

Hypotheses

Notwithstanding the above-mentioned findings, only a small amount of scholarly research (e.g., Kubey et al., 2001) has been directed towards the understanding of how ICTs affect college students' academic performance. This study attempted to rectify this disparity in research by focusing on Taiwanese college students' academic performance and mobile phone usage. The other area that this study attempted to explore was the relationship among college students' social capital and their mobile phone usage. The study proposed to examine: (1) if Taiwanese college students were addicted to their mobile phones; (2) the difference between self-reported mobile phone usage and the relationship with social capital; (3) the difference between self-reported mobile phone usage and user's academic performance.

Questionnaire and participants

A structured questionnaire in traditional Chinese text (translated directly from the English questionnaire) was used to collect relevant data on several issues relating to self-reported mobile phone usage, mobile phone addiction, depression, social capital, and academic performance among Taiwanese college students. The questionnaire items included questions, statements, and demographic information. Items regarding depression were adapted from Kraut, Bessiere and Kiesler's (2004) study. Additional items were developed from findings resulting from a review of the literature (e.g., Choi, 2002).

This survey was administered online (due to geographic limitations) in the spring of 2004. A recruiting note was e-mailed to Taiwanese college students in different schools. The note also asked the recipients to refer the survey to their college peers. Each participant was given an identification code to avoid double responding. A total of 169 Taiwanese college students participated in the study, with three not fully completing the questionnaire. Participation was on an anonymous, voluntary basis.

Of the 166 responses 54.4% were female. 71% were between 20 and 23 years old. All of the Taiwanese participants either currently have or used to have (i.e., 2 of the 166 participants no longer have mobile phones) their own mobile phones. Most of the students (i.e., 77.5%) have owned their mobile phones for more than three years.

Variables

To measure self-reported mobile phone usage, the survey asked respondents to indicate whether they characterized themselves as being a "very heavy user," a "heavy user," a "medium user," a "light user," or a "very light user" of mobile phones. Test-retest reliability resulted in a five-item addiction scale tested with Cronbach alphas of 0.83. The addiction

scale included: (1) "If I don't have my mobile phone with me, I feel uncomfortable;" (2) "I feel like a slave to my mobile phone;" (3) "If nobody calls me for a while, I feel lonely;" (4) "I feel distressed if I can't reach my friends by mobile phone;" and (5) "I feel 'addicted' to the mobile phone."

A new addiction scale was computed by means of the above five items. When comparing respondents' self-reported mobile phone usage and the new addiction scale, the results indicated a significant positive relationship (i.e., $r(166) = 4.42$, $p < 0.01$) (i.e., that the Taiwanese respondents' self-judgments were reliable).

Several questions were designed to examine participants' relationships with their friends and family since they began using their mobile phones. Students' responded to a series of three questions (i.e., "since getting a mobile phone, I feel my relationships with friends have improved;" "since getting a mobile phone, I feel my relationships with family have improved;" "since getting a mobile phone, I meet my closest friends more often") pertaining to relationships which were measured on a five-point scale (i.e., "strongly agree;" "agree;" "natural;" "disagree;" "strongly disagree"). In addition, two opinion questions (i.e., "I really need to have a mobile phone to keep up with my family" and "I really need to have a mobile phone to keep up with my friends") were used to examine participant's beliefs regarding whether or not having mobile phones increased their social capital.

The other dependent variable asked students to identify how many phone numbers they currently have stored in their mobile "phone books." They were asked to choose one of the following items: "less than 33;" "34-50;" "51-75;" "76-100;" or "more than 100."

This study attempted to discern if mobile phone usage has a positive relationship with depression, as there is a debate over whether or not ICT use is associated with depression. Test-retest reliability for four depression

items resulted in a three-item depression scale with Cronbach alphas of 0.81. The depression scale included: (1) “How many days in the last week did you feel depressed;” (2) “How many days in the last week did you feel lonely;” and (3) “How many days in the last week did you feel that you could not shake off the blues, even with help from your friends or family?”

Data analysis, findings, implications, and limitations

Cross-tabulation was utilized as an exploratory data analysis technique to examine for trends among the data variables. Taiwanese female students self-reported themselves as being heavier mobile phone users than did their male peers. This was similar to the American sample (Chen, 2004). These results correspond with data that finds that females make more use of mobile phones than males (e.g., Fischer, 1992; Ling, 2004).

Unlike American students, who did report a mobile phone addiction (Chen, 2004), Taiwanese participants reported no mobile phone addictions. 84.8% of female Taiwanese students self-reported “natural,” “disagree,” or “strongly disagree” when asked if they were addicted to their mobile phones and 95.1% of male Taiwanese self-reported that they were not addicted to their mobile phones. An independent T-test was also used to assess differences in mobile phone usage between males and females by means of a self-reported mobile addiction scale. However, there were no statistically significant results.

In contrast to the U.S. sample (Chen, 2004), where students reported mobile phone addiction, Taiwanese students seem not to believe that they are addicted to their mobile phones. A possible reason for this may be that the Taiwanese students in this sample have owned mobile phones for a longer period of time than the American students. In the Rutgers project

there was a trend that the longer the respondents owned mobile phones, the less addiction they reported (Chen, 2004).

Also, Taiwanese college students did not report a statistically significant relationship between self-reported mobile phone addiction and depression in contrast to the Korean (Park, 2005) and American studies (Chen, 2004), as well as other ICT studies (e.g., Kraut et al., 1998). In Park's (2005) study, Korean students used their mobile phones as depressants. In the American data, self-reported mobile phone addiction was positively associated with participants' depression (Chen, 2004). In this study, 78.2 % of Taiwanese college students felt depression less than two days per week.

The difference in results may be due to this Taiwanese sample being special, or they may show a need for a better translation or better measurement. Future studies might want to consider cultural difference and/or seek better scales and translations. Random samples or larger samples could also help to get more representative results.

Social capital

Unlike the American sample, which had a significant positive relationship between the mobile phone addiction scale and the statement, "I really need to have a mobile phone to keep up with my family" (Chen & Lever, 2005), the Taiwanese sample did not show a relationship between these two variables. Moreover, there were no significant relationships self-reported in this study that correspond with the above statement.

However, when asked to relate whether or not one agreed with the statement "I really need to have a mobile phone to keep up with my friends," the sample demonstrated a strong significant positive relationship (alpha sig. of 0.01). Specifically, the heavy mobile phone users agreed that they needed to have a mobile phone to keep up with their friends (i.e., $r(166) = 2.24$, $p < 0.01$). These results correspond with the U.S. results (Chen & Lever, 2005),

as well as many of the findings of other communication scholars (e.g., Taylor & Harper, 2001; Katz & Aakhus, 2002; Ling, 2004; Ito et al., 2005).

When using the “addiction scale” to compare “I really need to have a mobile phone to keep up with my friends,” there was also a strong positive result (alpha sig. of 0.01). Participants who reported that they were more addicted to their mobile phones also agreed more than others that they needed to have a mobile phone to keep up with their friends (i.e., $r(166) = 3.94$, $p < 0.01$). The heavy mobile phone users and users who were more addicted to their mobile phones valued their mobile phones as necessary tools to keep up with their friends more than light users and users who reported less addiction to their mobile phones. This was the same as in the American study (Chen & Lever, 2005). However, the Taiwanese study did not report a statistically significant relationship between mobile phone addiction and keeping up with family.

Moreover, the participants in this study agreed that their relationships with their friends and family improved after they began using mobile phones. When self-reported mobile addiction and self-reported mobile phone usage were used to compare the statements “since getting a mobile phone, I feel my relationship with my family is better” and “since getting a mobile phone, I feel my relationship with my friends is better,” both of the statements were found to have a strong positive relationship with self-reported mobile phone addiction and self-reported mobile phone usage (alpha sig. of 0.01). Heavy mobile phone users and mobile phones addicts both agreed that their relationships with their friends and family were better after they began using mobile phones.

When using self-reported mobile phone usage and self-reported mobile phone addiction to compare the statement, “since getting a mobile phone, I meet my closest friends more often,” the results showed a

significant positive relationship in the self-reported mobile addiction sample (alpha sig. of 0.01), but not for those who self-reported mobile phone usage.

Taiwanese college students reported that mobile phones are an important communication tool for maintaining their social capital with friends, but not necessary with family. Results showed that participants who used their mobile phones more often or who are addicted to their mobile phones believed that their mobile phones maintained and increased their social capital more so than other users.

Patterns fitting Ball-Rokeach and DeFleur's (1976) media dependency theory were seen in this study, such as the heavier a student's mobile phone use, the more they agreed that their mobile phones were a "must need" item to maintain their social capital with friends and family. Those Taiwanese college students who self-reported addiction patterns also agreed that mobile phones are necessary to maintain their social capital with friends. These findings correspond with Kandell's (1998) assumption that college students have a strong desire to develop a firm sense of identity and a need to develop meaningful and intimate relationships. They therefore depend on their ICTs to find emotional support, as well as information and resources (Ball-Rokeach and DeFleur, 1976). In this study and in the Rutgers' project, results showed strong relationships between mobile phone use and college students' social capital.

In regards to the question of whether or not mobile phone usage can be related to the total amount of time that participants spend with people in face-to-face situations, the results of the U.S. sample showed a significant negative relationship of self-reported mobile phone usage and the total amount of time that participants spend with people in face-to-face situations (alpha sig. of 0.01) (Chen & Lever, 2005). A similar pattern, but with a weaker negative relationship, was also found in the Taiwanese sample

between mobile phone usage and the amount of mobile phone calls concerned with socializing with friends (i.e., $r(166) = -2.02$, $p < 0.05$). The result indicated heavy mobile phone users meet their friends less. This data cannot determine if heavy mobile phone users isolated themselves from society or if they used their mobile phones to communicate with their friends from remote distances or if the heavy mobile phone users depend on their mobile phones to contact others instead of spending time in face-to-face situations. More study is needed to better understand this issue.

Analysis of the data also found that significant negative relationships among self-reported mobile phone usage and the total number of phone numbers in participants' mobile "phonebook" were present in the U.S. sample. In fact, heavy mobile phone users reported that they had less phone numbers in their mobile phone books (alpha sig. of 0.01) (Chen & Lever, 2005). When ANOVA was used to compare the difference between self-reported mobile phone usage and the total phone numbers in participants' mobile "phonebook" in the Taiwanese sample, there was no statistical significance. Although there was no statistical significance in the Taiwanese sample, the results also showed a weak trend that the heavier the respondents reported their mobile phone usage, the less phone numbers they stored in their mobile phones. These findings correspond with Gergen's (2002, 2003) concept that dialogue technologies (e.g., mobile phone) are more potent in drawing individual into deeper relationships. Although both American and Taiwanese respondents reported that they were "addicted" to their mobile phones and/or heavy mobile phone users, the results showed that they did not have large "phonebooks" in their mobile phones. There was no statistical significance to the numbers in their mobile phonebooks between the Taiwanese heavy mobile phone users and the light mobile phone users, whereas the American heavy mobile phone users showed a statistical significance in making a lot of calls to a limited amount of numbers.

Academic performance

Frequent mobile phone users in the U.S. (alpha sig. of 0.01) (Chen & Lever, 2005) and Taiwan (alpha sig. of 0.01) also reported that consistent use of their mobile phones affected their academic performance and learning. The Taiwanese results found significant positive relationships between both self-reported mobile phone usage (alpha sig. of 0.01) and self-reported mobile phone addiction (alpha sig. of 0.01) with the statement, “since getting a mobile phone, I feel my studies have been interfered with by my mobile phone.” This corresponds with Kubey et al.’s (2001) findings, but not Southwick’s (2002) results.

Interestingly, self-reported very heavy mobile phone users GPAs were the best among the five different mobile phone usage groups (i.e., “very heavy user;” “heavy user;” “medium user;” “light user;” and “very light user”), whereas self-reported heavy mobile phone users reported that they did not do very well in their school work. More research needs to be done to find an adequate explanation for this pattern.

Additional considerations

At this point, the data on self-reported mobile phone addiction, self-reported mobile phone usage, relationships with friends and parents, and mobile phone usage and students’ academic performance are unclear, in part due to the small non-random samples of participants. More research is needed to establish the incidence of issues associated with mobile phone usage or addiction and social capital, as well as academic performance. Because there was no relationship between mobile phone addiction and depression and there were strong relationships between mobile phone usage and addiction with relationships with friends, the author suspects that mobile phone addiction relates to people desire to have better relationships with others. This might be worth studying in the future.

Conclusions

This exploratory study yielded some interesting findings among self-reported mobile phone usage, self-reported mobile phone addiction, students' social capital, and students' academic performance in Taiwan. There was a positive relationship between mobile phone usage and mobile phone addiction in improving relationships with friends. While heavy mobile phone users agreed more than other respondents that their relationships with their friends and family had improved after they began using their mobile phone, they also reported that they had a better relationship with their friends, than with their family.

Although the results did not test directionality, significant empirical evidence illustrated the association between mobile phones, social capital, and academic performance. Evidence was found to support the idea that Taiwanese heavy mobile phone users maintained close ties with a small network of people. Thus, while those who reported lower levels of use also reported having a large number of contacts in their phonebooks, they did not seem to be in regular contact with them. In other words, heavy users seemed to maintain consistent contact with those with whom they were already closely connected.

Taiwanese heavy mobile phone users also reported that frequent usage of their mobile phones effected their academic learning and performance. A paradoxical finding was that this pattern did not affect the group of very heavy mobile phone users. Finally, an intriguing result was that very heavy mobile phone users also had the best GPAs. This subject may be worth future study.

Chen's (2004) study found a significant positive relationship between mobile phone addiction and depression in an American sample. In the Taiwanese study, only a non-statistically significant negative relationship

between mobile phone addiction and depression was found. The American sample found gender effects of mobile phone use; American female students reported that they were more addicted to their mobile phones than did male students (Chen, 2004). However, the Taiwanese sample did not show any gender effects. The differences between the Taiwanese and the American samples may be because the mean number of years that the Taiwanese college students have been using mobile phones is greater than that of the American college students, or that Taiwanese college students are more accustomed to their mobile phones. The Taiwanese college students showed a lower tendency to be addicted to their mobile phones than did the American college students.

In sum, the major conclusion of this study is that Taiwanese participants value their mobile phones as a means to improve their relationships with their friends and family. There was a strong trend of participants using their mobile phones to gain better relationships with their friends, but only a weak trend to gaining a better relationship with their parents. For those college participants, their mobile phones were communication tools to enhance their social capital.

References

- Auckerman, W. (2001, January 2). Survey shows cell phone secrets of Japanese youth. *Internetnews.com*. Retrieved May 27, 2006 from <http://news.earthweb.com/bus-news/article.php/548021>
- Ball-Rokeach, S. J., & DeFleur, M. L. (1976). A dependency model of mass media effects. *Communication Research*, 3(1), 3-21.
- Bull, M. (2005). No dead air! The iPod and the culture of mobile listening. *Leisure Studies*, 24(4), 343-355.
- Castells, M. (2001). *The Internet galaxy: Reflections on the Internet, business, and society*. Oxford, UK: Oxford University Press.
- Chen, Y.-F. (2004, October). *The relationship of mobile phone use to addiction and depression among American college students*. Paper presented at the meeting of the 2004 Seoul Conference on Mobile Communication Conference. Seoul, Korea.
- Chen, Y.-F., & Lever, K. M. (2005, April). *Relationships among mobile phones, social networks, and academic achievement: A comparison of US and Taiwanese college students*. Paper presented at the meeting of the Hungarian Academy of Sciences Conference. Budapest, Hungary.
- Choi, B. M. (2002). A study on the comparison of the patterns of mobile phone usage amongst middle school and high schools students. *Korean Public Health Association*, 28, 398-417.
- Chou, C., & Hsiao, M. C. (2000). Internet addiction, usage, and gratifications—the Taiwan's college students' case. *Computer & Education*, 35, 65-80.
- Coghill, R. (2001). Inappropriate measures. *The Ecologist*, 31(8), 28-29.
- de Gournay, C. (2002). Pretense of intimacy in France. In J. E. Katz & M. A. Aakhus (Eds.), *Perpetual contact: Mobile communication, private talk, public performance* (pp. 193-205). Cambridge, UK: Cambridge University Press.
- FIND (2003). E-usage: Mobile Internet subscribers in Taiwan 2003. *Focus on Internet News and Data*. Retrieved May 27, 2006 from <http://www.find.org.tw/eng/news.asp?msgid=75&subjectid=4&pos=0>
- Fischer, C. (1992). *America calling: A social history of the telephone to 1940*. Berkeley, University of California Press.

- Gergen, K. (2003). Self and community in the new floating worlds. In K. Nyiri (Ed.), *Mobile democracy: Essays on society, self and politics* (pp. 103-114). Vienna, Austria: Passagen Verlag.
- Gergen, K. (2002). The challenge of absence presence. In J. E. Katz & M. A. Aakhus (Eds.), *Perpetual contact: Mobile communication, private talk, public performance* (pp. 227-241). Cambridge, UK: Cambridge University Press.
- Griffiths, M. (2000). Does Internet and computer “addiction” exist? Some case study evidence. *CyberPsychology & Behavior*, 3(2), 211-218.
- Ito, M., Okabe, D., & Matsuda, M. (eds.) (2005). *Personal, portable, pedestrian: Mobile phones in Japanese life*. Cambridge, MA: MIT Press
- ITU digital access index: World’s first global ICT ranking (2004). *International Telecommunication Union*. Retrieved May 27, 2006 from http://www.itu.int/newsarchive/press_releases/2003/30.html
- Johnsen, T. E. (2003). The social context of the mobile phone use of Norwegian teens. In J. E. Katz (Ed.), *Machines that become us: The social context of communication technology* (pp. 161-170). New Brunswick, NJ: Transaction Publishers.
- Kandell, J. J. (1998). Internet addiction on campus: The vulnerability of college students. *CyberPsychology & Behavior*, 1(1), 11-17.
- Katz, J. E. (2005). Mobile phones in educational settings. In K. Nyiri (Ed.), *A sense of place: The global and the local in mobile communication* (pp. 305-317). Vienna, Austria: Passagen Verlag.
- Katz, J. E., & Aakhus, M. A. (eds.) (2002). *Perpetual contact: Mobile communication, private talk, public performance*. Cambridge, UK: Cambridge University Press.
- Katz, J. E., & Rice, R. E. (2002). *Social consequences of Internet use: Access, involvement, and interaction*. Boston, MA: MIT Press.
- Kraut, R., Bessiere, K., & Kiesler, S. (2004). Online interaction and depression. *E-Living: Life in a digital Europe*. Retrieved May 30, 2006 from <http://www.eurescom.de/e-living/conf.htm>
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being? *American Psychologist*, 53(9), 1017-1031.

- Kubey, R. W., Lavin, M. J., & Barrows, J. R. (2001). Internet use and collegiate academic performance decrements: Early findings. *Journal of Communication, 51*(2), 366-382.
- Licoppe, C. (2003). Two modes of maintaining interpersonal relations through telephone: From the domestic to the mobile phone. In J. E. Katz (Eds.), *Machines that become us: The social context of communication technology* (pp. 171-186). New Brunswick, NJ: Transaction Publishers.
- Licoppe, C., & Heurtin, J. P. (2001). Managing one's availability to telephone communication through mobile phones: A French case study of the development dynamics of mobile phone use. *Personal and Ubiquitous Computing, 5*(2), 9-108.
- Ling, R. S. (2004). *Mobile connection: The cell phone's impact on society*. San Francisco, CA: Morgan Kaufmann.
- Ling, R. S., & Yttri, B. (2002). Hyper-coordination via mobile phone in Norway. In J. E. Katz, & M. A. Aakhus (Eds.), *Perpetual contact: Mobile communication, private talk, public performance* (pp. 139-169). Cambridge, UK: Cambridge University Press.
- McIlwraith, R., Jacobvitz, R. S., Kubey, R., & Alexander, A. (1991). Television addiction: Theories and data behind the ubiquitous metaphor. *American Behavioral Scientist, 35*(2), 104-121.
- Mobile phones becoming a major addiction (2003, December 10). *The Sydney Morning Herald*. Retrieved May 27, 2006. from <http://www.smh.com.au/articles/2003/12/10/1070732250532.html?from=storyrhs&oneclick=true>
- Mouchard, A. (2003, May 15). How cell phones are changing our social habits. *Mercury News*. Retrieved January 2, 2005 from http://www.mercurynews.com/mld/mercurynews/business/technology/personal_technology/5867613.htm?1c
- Palen, L. (2002). Mobile telephone in a connected life. *Communications of the ACM, 45*(3), 78-82.
- Park, W. K. (2005). Mobile phone addiction. In L. Rich & P. E. Pedersen (Eds.), *Mobile communications: Re-negotiation of the social sphere* (pp. 253-272). London, UK: Springer.

- Roos, J. P. (2001, August). *Postmodernity and mobile communications*. Paper presented at the meeting of the European Sociological Association on 5th Conference of the ESA, Helsinki, Finland.
- Shaffer, H. J., Hall, M. N., & Bilt, J. V. (1999). Computer addiction: A critical consideration. *American Journal of Orthopsychiatry*, 70(2), 162-168.
- Smith, R. (1986). Television addiction. In J. Bryant, & D. Anderson (Eds.), *Perspective on media effects* (pp. 109-128). Hillsdale, NJ: Lawrence Erlbaum.
- Southwick, S. L. (2002). *Internet use, academic performance, and social involvement in middle school age children*. Unpublished doctoral dissertation, Hofstra University, Hempstead, NY. [UMI: 3057264]
- Sugiyama, S., & Katz, J. E. (2003). Social conduct, social capital and the mobile phone in the US and Japan: A preliminary exploration via student surveys. In K. Nyiri (Ed.), *Mobile democracy: Essays on society, self and politics* (pp. 375-385). Vienna, Austria: Passagen Verlag.
- Taylor, A. S., & Harper, R. (2001). *Talking "activity": Young people and mobile phone*. CHI 2001 Workshop: Mobile communication: Understanding users, adoption, and design, Seattle, WA. Retrieved May 27, 2006 from http://www.cs.colorado.edu/~palen/chi_workshop/papers/TaylorHarper.pdf
- Turkle, S. (1995). *Life on the screen: Identity in the age of the Internet*. New York, NY: Simon & Schuster.
- Wikle, T. A. (2001). America's cellular telephone obsession: New geographies of personal communication. *Journal of American & Comparative Cultures*, 24(1/2), 123-128.
- Young, K. S. (1998). *Caught in the net: How to recognize the signs of Internet addiction*. New York, NY: John Wiley & Sons, Inc.

手機使用後產生的社會現象： 以台灣大學生為例

陳羿帆

美國羅格斯大學

摘要

手機使用在世界大學校園裡有逐年增加的趨勢，大學生手機上癮的報告也出現在一般非學術性的報導中。相較於一些學術研究專注於其他媒體上癮的研究，研究手機上癮的報告比較少見。

近幾年來，台灣的手機持有率在世界的排行中高居不下，對大部份的年輕人來說，利用手機來跟家人或朋友溝通成爲日常生活的一部份。有些學者研究過度使用各種媒體和學生的課業上表現的關係，但是這些被研究過的媒體中，並不包括手機。這個研究的目的是找出學生手機使用、手機上癮、人際關係以及學業表現等等的社會現象關連性。

166 學生完成網路問卷調查。調查結果顯示台灣大學生沒有手機上癮的問題。學生自認是手機高度使用者同時也顯示出和家人朋友關係比較好。手機高度使用者報告他們的手機影響到課業表現。

關鍵詞：手機使用、社會現象、台灣

