

**CELL PHONE USE IN SOCIAL SETTINGS:  
PRELIMINARY RESULTS FROM A STUDY IN THE UNITED STATES AND FRANCE**

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**ABSTRACT**

Cellular phones and other mobile technologies are essential components of mobile e-commerce (m-commerce) systems. People can use such devices, however, wherever and whenever they want, creating questions of their appropriate use in social settings. This paper presents preliminary results of a survey of cell phone use and attitudes about their use among university students in the United States and France.

**Keywords:** cell phone, mobile phone, text messaging, social issues, cross-cultural study

**INTRODUCTION**

Mobile computing technologies such as handheld computers and cellular phones are essential components of mobile commerce (m-commerce) systems. In our increasingly wireless and mobile world, the use of such devices presents situations that do not exist with wired computers and phones. People can use mobile devices wherever and whenever they want including in cars, on city streets, in restaurants, and in classrooms. This “anywhere” use raises questions of the suitability, acceptability, and appropriateness of using such devices in social settings, that is, in situations in which other people are aware of the device’s use. When and where should the use of such devices be allowed or tolerated? Should there be legal constraints on their use? Will society develop norms regarding the use of mobile devices? The answers to these and similar questions can have an impact on society in general and on the acceptance of m-commerce in particular.

Mobile technologies bring new social concerns to the spotlight [8]. Many people do not appreciate ringing mobile phones and key tapping users in public locations. In classrooms, instructors compete with PDAs, laptops, and mobile phones for their students’ attention, and are interrupted by this technology regularly. Although society encourages the use of mobile technology in many ways, and institutions of higher education encourage (or even require) the use of innovative technologies as part of the learning experience, mobile devices and their applications raise issue of their appropriateness of use under varying circumstances.

This research investigates the use of mobile technologies, specifically cell (mobile) phones, in public, business, academic, and other social settings, and explores the social issues related to the use of this technology. The central questions of this research are: In what ways are cell phones

used in social settings? What is perceived to be the acceptable use of cell phones in social settings and is it different from the actual use? Do the use and attitudes related to the use of cell phones vary by country?

To investigate these questions, a questionnaire was administered to students in the United States, France, Italy, Finland, and Turkey asking about their use of cell phones and their attitudes about acceptable and unacceptable cell phone use. At the time this paper was written, only data collection from the United States and France was complete. Preliminary analysis of this data was conducted to look for patterns in user behavior and attitudes, with comparisons between the U.S. and France. This paper presents some early results from the U.S.-France data analysis. Further analysis of the U.S.-France data continues, along with analysis of data from the other countries.

## **BACKGROUND**

Although cellular phone use in the United States lags behind many other countries, the most recent Lemelson-MIT Invention Index survey found that 30% of US adults rate the cell phone as the invention they “hate the most, but can’t live without” [3]. As with automobiles, telephones, and televisions before them, cell phones have brought with them many unforeseen costs along with benefits. As society embraces the use of technology, it must also deal with its side effects. The proper use of cell phones becomes more of a concern as the number of cell phones increases. Sprint, a U.S. telecommunications company, actually employs a Cell Phone Etiquette Spokesperson who educates people about responsible cell phone use [7].

Dryer, Eisbach, and Ark [2] discussed problems that arise with *social computing*, defined as “the interplay between persons’ social behaviors and their interactions with computing technologies.” (p. 653) They noted that the designs of most mobile devices do not take into account the presence of individuals other than their users. Furthermore, information technology can interfere with positive social encounters, and devices themselves sometimes make an antisocial statement.

### **Studies of Mobile Phone Use**

Empirical studies have begun to explore the social issues involved with cell phone use. Palen [5] discusses how mobile phones allow individuals to maintain connectedness and expand the scope of their activities beyond what was achievable without the technology. However, this accessibility involves tradeoffs – the social unacceptability of use at inappropriate times versus the consequences of missing a call when the phone is turned off.

Cell phone users often have strong opinions as to where it is appropriate and inappropriate to use a cell phone. Participants of focus groups in Norway [4] stated that cell phones should not be used in airports, stores, meetings, on trains and busses, at certain social functions, and in theaters, with the most serious offense involving the use of a mobile phone in a restaurant. A study by Palen, Salzman, and Youngs [6] showed that a person’s attitude towards public cell phone use changes (becomes more accepting) as they use a cell phones more. Palen [5] predicted that as adoption of cell phones increases, people will be less concerned about appropriate use, but will still call for “cell-free” zones.

Few cross-cultural studies of cell phone use have been conducted. One by Carlson, Kahn, and Rowe [1] examined the impact of cell phone use on decision-making among sales organizations in the U.S. and France. They found that cell phone use predicted changes in certain independent variables more accurately in the U.S. than in France.

## **METHODOLOGY**

A written questionnaire was used to efficiently collect use and attitude data from a large and broad sample of individuals. A copy of the questionnaire is available in French from the first author and in English from the other authors. Subjects were first asked for demographic and background data, along with their level of cell phone use. Then subjects were asked to identify situations in which they have used a cell phone, along with their feelings about prohibiting cell phone use in these situations. Similar questions were asked about the subjects' use of and feelings regarding text messaging (also called SMS messaging or texting).

The questionnaire was administered to undergraduate and graduate students in the fall of 2003 at three institutions: a large northeastern U.S. university, a large western U.S. university, and a university in Paris, France. Subjects were self-selected and either owned or had full time use of a cell phone at the time of the survey. A total of 475 responses were received with 91 and 241 respectively from the two U.S. universities and 143 from the French university.

## **PRELIMINARY RESULTS**

This section presents some preliminary results from the data analysis. The average age of respondents was 24 years in the U.S. and 26 years in France. Females represented 52% of the U.S. and 49% of the French subjects. 63% of the U.S. subjects and 48% of the French subjects are currently worked. The average time subjects had been using a cell phone was 4.01 years in the U.S. and 4.44 years in France.

### **Use of Cell Phones for Voice Calls**

Around 75% of the respondents use a cell phone at least 50% of the time in both the U.S. and France, and around 15% use a cell phone as their sole form of voice communication. Figure 1 shows the locations where respondents made voice calls on their cell phones in the past year in the U.S. and France. Chi-square analysis of the data showed several statistically significant differences (at the .001 level) between countries. Difference in the use of cell phones while sitting in a motor vehicle was significant, perhaps explained by the American reliance on automobiles compared to the French. The difference in use while driving a motor vehicle is also significant, which might be explained by the fact that it is illegal to drive and use a cell phone in France, while it is not illegal in the U.S. states where the survey was conducted. Differences in the use of cell phones in a restaurant and in a public restroom are also significant, although further analysis is needed to explain these differences.

Table 1 gives the means for the strength of the respondents' agreement with statements related to places where cell phone voice use should be prohibited in the U.S. and France. The responses were on a Likert scale of 1 (strongly disagree) to 7 (strongly agree). The data is fairly consistent with the actual use of cell phones (Figure 1). For example, few respondents make calls in a

classroom in the U.S. and France, and there is strong agreement in both countries with prohibition of cell phone use in the classroom. All mean responses were higher in France, except the last two, and the differences were statistically significant. These differences might be explained by the greater emphasis on government regulation in France compared to the U.S.

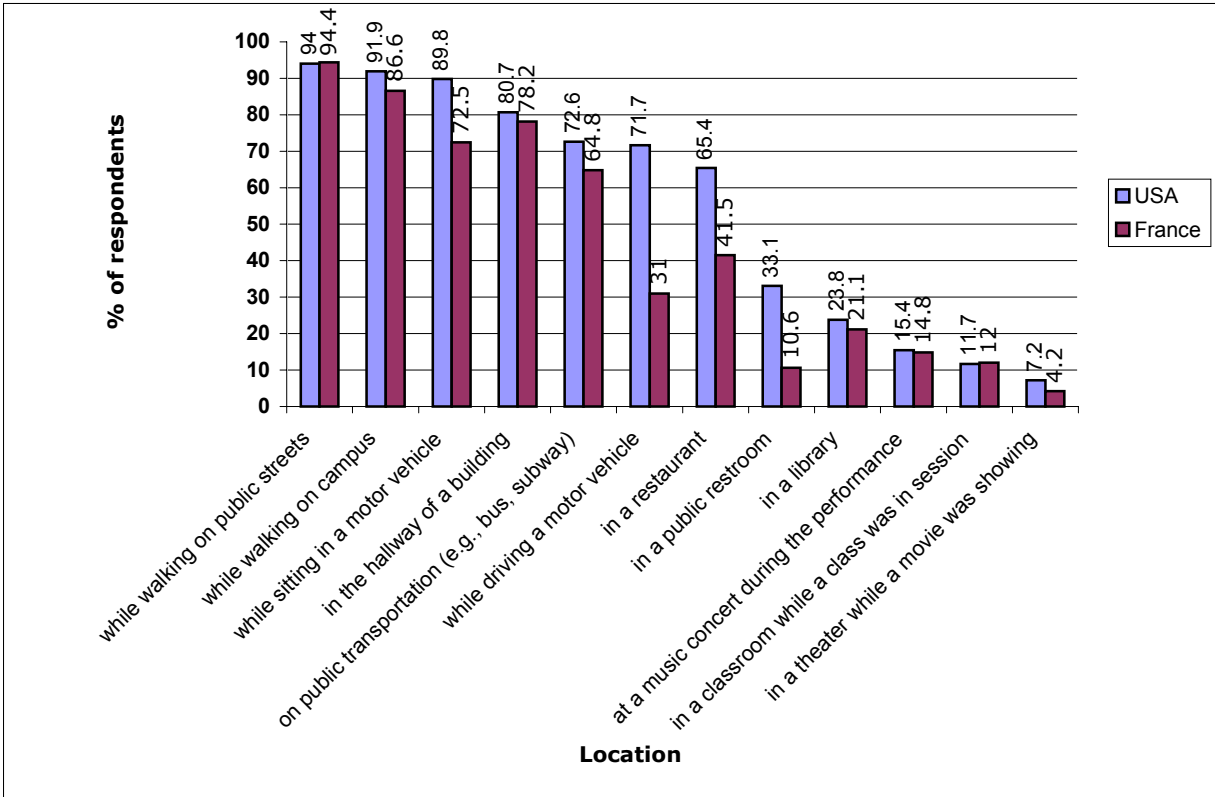


Figure 1. Locations where cell phone voice calls were made in past year

	USA	France
Cell phone use in the classroom should be prohibited	6.04*	6.43
Cell phone use in theaters should be prohibited	5.63**	6.41
Cell phone use while driving should be prohibited	4.53**	6.07
Cell phone use in restaurants should be prohibited	3.44**	4.18
Cell phone use on public transportation should be prohibited	2.48*	2.81
Cell phone use in public restrooms should be prohibited	2.42	2.29
Cell phone use while walking should be prohibited	1.48	1.28

Significant difference at \*\* .000, \* .05 level

Table 1. Agreement with statements about prohibition of cell phone use

### Use of Cell Phones for Text Messaging

Figure 2 shows the locations from where respondents sent text (SMS) messages (texting) using their cell phones in the past year for the U.S. and France. In all but two of the locations, texting was more common in France than in the U.S., which can be explained by the relative newness of this form of communication in the U.S. compared to France. Chi-square analysis of the data

shows statistically significant differences (at the .001 level) in the first seven locations but not in the other locations. Further analysis of the data is needed to explain these results.

Table 2 gives the means for the strength of the respondents' agreement with statements related to where text messaging should be prohibited in the United States and France (1 to 7 Likert scale). In general, respondents do not feel as strongly about prohibition of texting as they do about prohibition of voice calls (Table 1), although they do feel that texting while driving and in the classroom should be prohibited. Significant differences between the U.S. and France were found in five of the seven situations, although further analysis is needed to explain these differences.

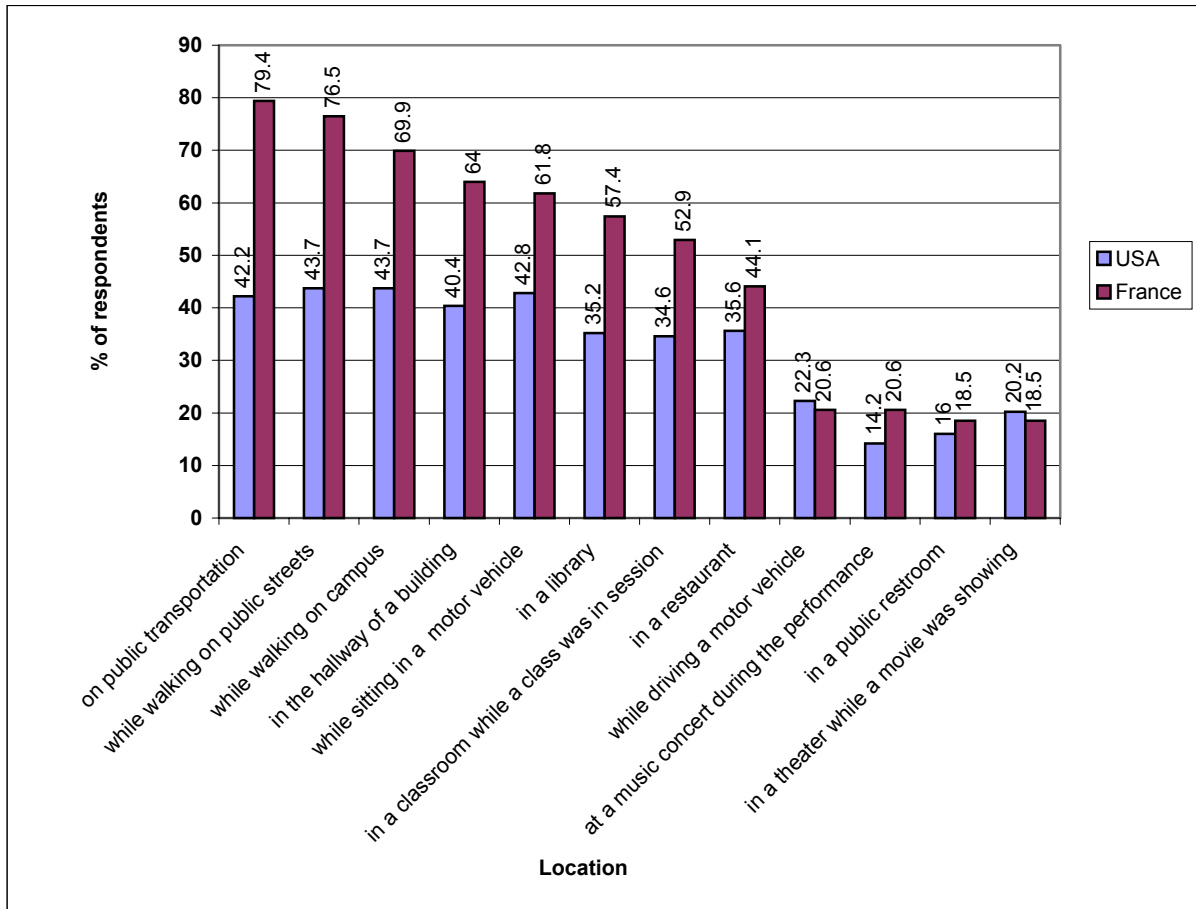


Figure 2. Locations from where text messages were sent in past year

	USA	France
Texting while driving should be prohibited	6.04*	5.50
Texting in the classroom should be prohibited	4.14**	4.68
Texting in theaters should be prohibited	2.68	2.99
Texting in restaurants should be prohibited	2.06	1.96
Texting in public restrooms should be prohibited	2.02**	1.61
Texting while walking should be prohibited	2.07***	1.12
Texting on public transportation should be prohibited	1.67***	1.21

Significant difference at \*\*\* .000, \*\* .01, \* .05

Table 2. Agreement with statements about prohibition of text messaging

## CONCLUSION

This paper provides preliminary results from a study that is looking at current use and attitudes towards the use of cell phones in several countries. These results suggest that there are significant differences in use of and attitudes toward the use of cell phones for both voice calls and text messaging, at least between the United States and France. Although some of these differences may be explained by cultural and legal differences between these countries, other factors such as age or the length of time that someone has used a cell phone may be important. We will explore these questions and others as we continue to analyze the data. The long-term goal of this research is to identify the social issues that have emerged with mobile technology and to explore ways of addressing problems with its use under certain circumstances.

The benefit of this research to mobile commerce may be to help identify in what social settings businesses will find it most acceptable to provide their m-commerce services to customers. If product is linked to customer location, the results may also provide some help in identifying the types of products that are most likely to be positively received by customers through a mobile medium. If the results show significant difference between countries, as seems to be the case from the preliminary analysis for the U.S. and France, global businesses will have a better indication of how to market their products using m-commerce in different countries.

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