

Cell Phone Addictions of Japanese and American College Students

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Abstract

Cell phones have gained popularity since the mid 1980s, and since then steadily more functions have been added. In fact, many things can be done only with cell phones. In addition to the ability to call directly, phones can now allow someone to listen to music, use the internet, take pictures, text, play games and use SNS. Because of this, now most people have cell phones. They are pretty much indispensable to everyday life. On the other hand, reliance on cell phones is also becoming a social problem. So, in researching this we asked: How do Japanese and American college students perceive cell phone addictions in general? To answer this we conducted a survey regarding the causes, effects and perceptions of cell phone usage. From the resulting data, it turns out that many college students use mobile phones for 3 to 5 hours a day. Many respondents are spending a lot of their time texting and browsing social media, rather than talking directly to others on their cell phones. It seems that the way of communication is changing. Although cell phones can help someone relax by listening to music or watching videos, it is clear that there are also negative effects from overuse, such as stress and anxiety.

Introduction

Mobile phones are becoming more important parts of our daily lives. Everywhere people are using their mobile phones. Through our research, we are looking for the causes, effects, and reasons behind cell phone addiction. We want to know how dangerous mobile phones can be physically, mentally and socially. We researched from many sources of information in America and Japan and conducted our own survey. From this research, we were able to learn just how much harm cell phone addiction is causing society and how to deal with this addiction.

1. Significance of the Study

Why did we make this research subject? We both think that we are addicted to video games spending hundreds to thousands of dollars on them per year; however, neither of us believe that we are addicted to our cell phones. We want to know how much we depend on the cell phones. We are always using mobile phones and friends are always using mobile phones when we are with them. It is because of this that we want to investigate why we use cell phones so much.

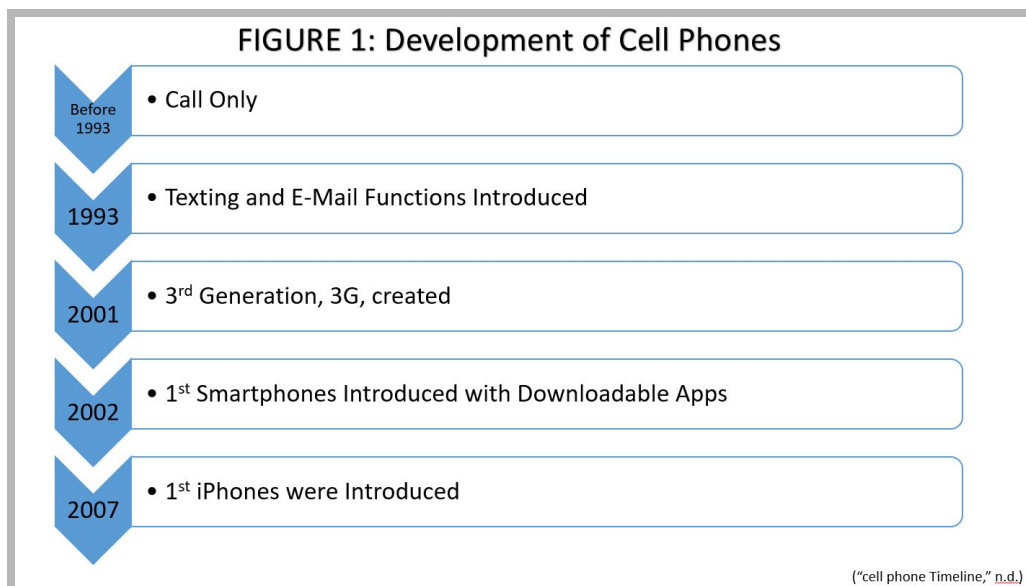
2. Research Questions

These are the survey questions that we set out to answer.

- 1)How do Japanese and American college students perceive cell phone addictions in general?
- 2)What causes Japanese and American university students excessive use of cell phones?

3. Literature Review

3.1. Development of Cell Phones



Cell phones could only be used for voice calling before 1993, as shown in Figure 1. Text messages and email functions were introduced in 1993, and in the year 2001, the third generation of cell phones, or 3G, were created and launched. In 2002, the first

smartphone that can use downloadable applications appeared and the usage of the mobile changed completely. In 2007, the first iPhone was introduced and would become one of the most popular and well known cell phone and smartphone in the world ("cell phone Timeline," n.d.).

3.2. Percentage of Cell Phone Ownership in USA

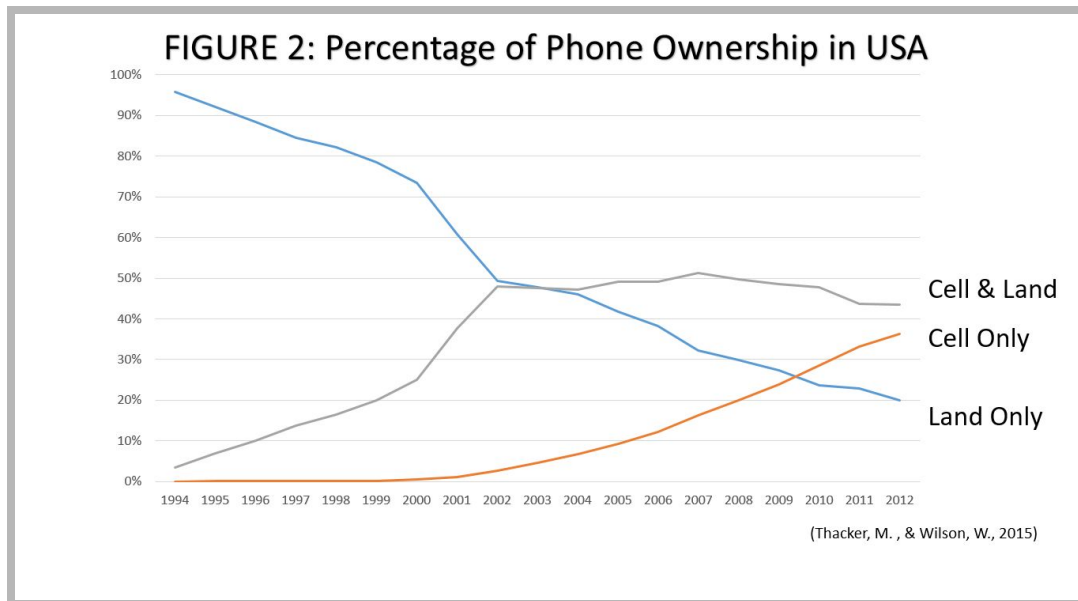
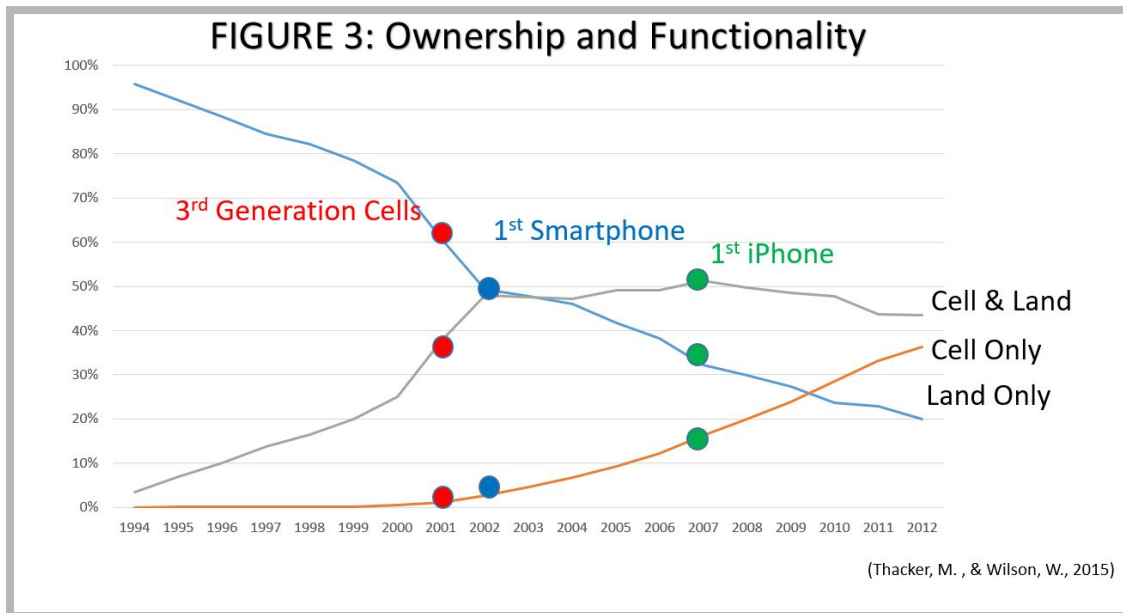


Figure 2 shows the percentage of telephone ownership in the United States. As the development of cell phones progressed the number of people who owned only a landline based phone decreased and the number of people who owned only cell phones increased. Also, it is clear that the decline of fixed-line owners has declined sharply from 2001 (Thacker, M., & Wilson, W., 2015). It is interesting to note that ownership of both landline based phones and cell phones increased until roughly 2001 and since 2007 has been slowly decreasing.

3.3. Ownership and Functionality



As can be seen from Figure 3, as new functions are added to cell phones, people are gradually owning only cell phones (Thacker, M., & Wilson, W., 2015). In this figure, 2001 is when the 3rd generation of cell phones were introduced. In 2002, the first smartphone appeared and in 2007 saw the introduction of the first iPhone. It can be seen that there are more people who own smartphones and cell phones than landlines by the year 2009, only 2 years after the iPhone launched.

3.4. Change in Cell Phone Usage Over Time

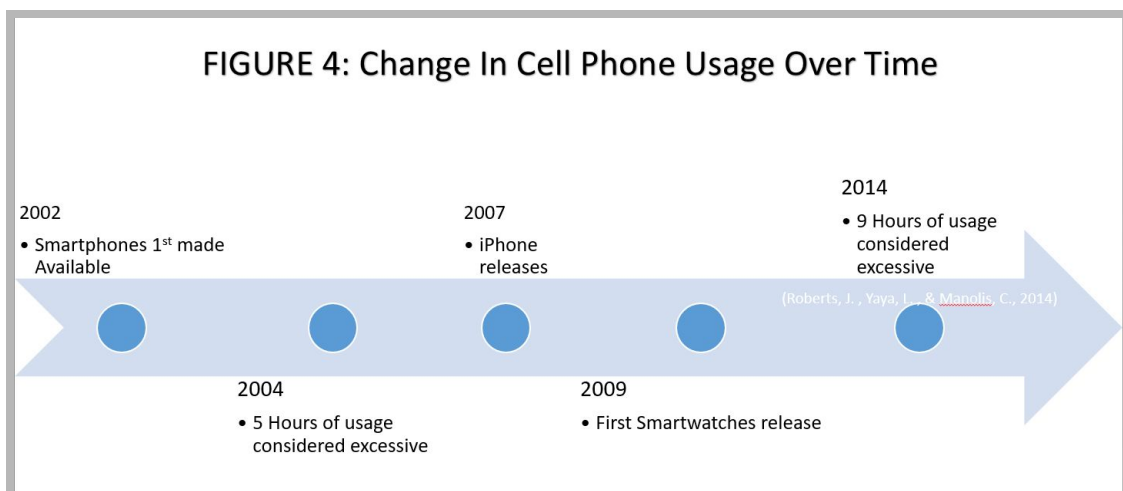
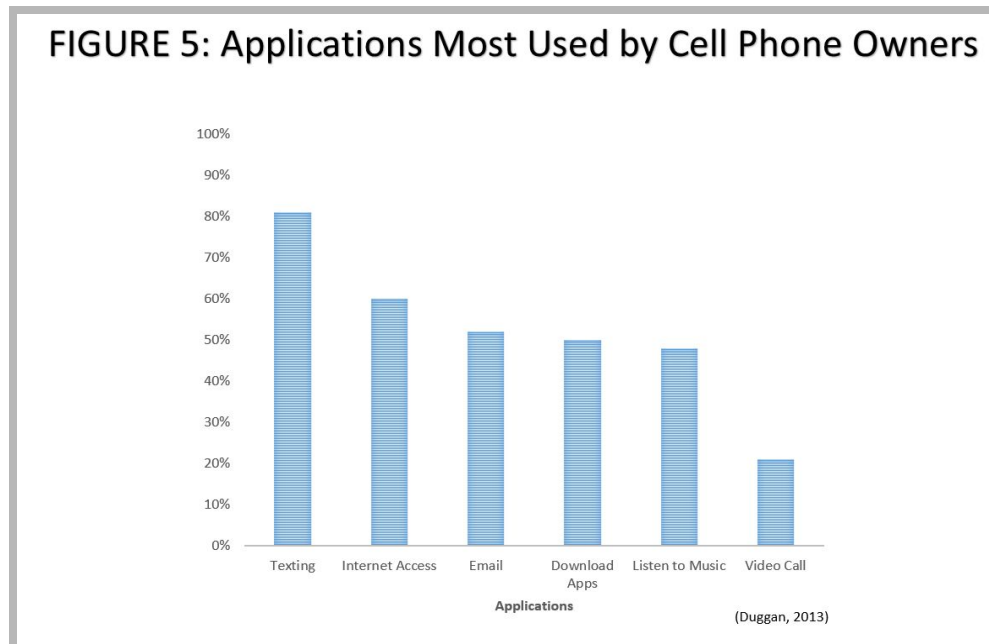


Figure 4 is a diagrammatic representation of the change in cell phone usage over time. As can be seen from Fig. 4, smartphones became available in 2002. In 2004 the use of cell phones for more than 5 hours was considered "excessive" (Khezhie, P., & Srivastava, A., 2016). The first iPhone was introduced in 2007 and the first smartwatch was introduced in 2009. By 2014 the use of cell phones for more than 9 hours became regarded as "excessive" (Roberts, J., Yaya, L., & Manolis, C., 2014).

3.5. Applications Most Used by Cell Phone Owners



As can be seen from FIG. 5, it can be seen that cell phones are now being used for many more purposes other than just telephone calls, such as text messages, internet access, e-mail, music, video, and downloading applications. (Duggan, 2013) Text messaging ranks highest here at over 80% of people use their cell phones for texting. It is also very interesting to see that voice calls rank lowest on this chart being around 30%, or half that, of texting.

3.6. Percentage of Usage by Age

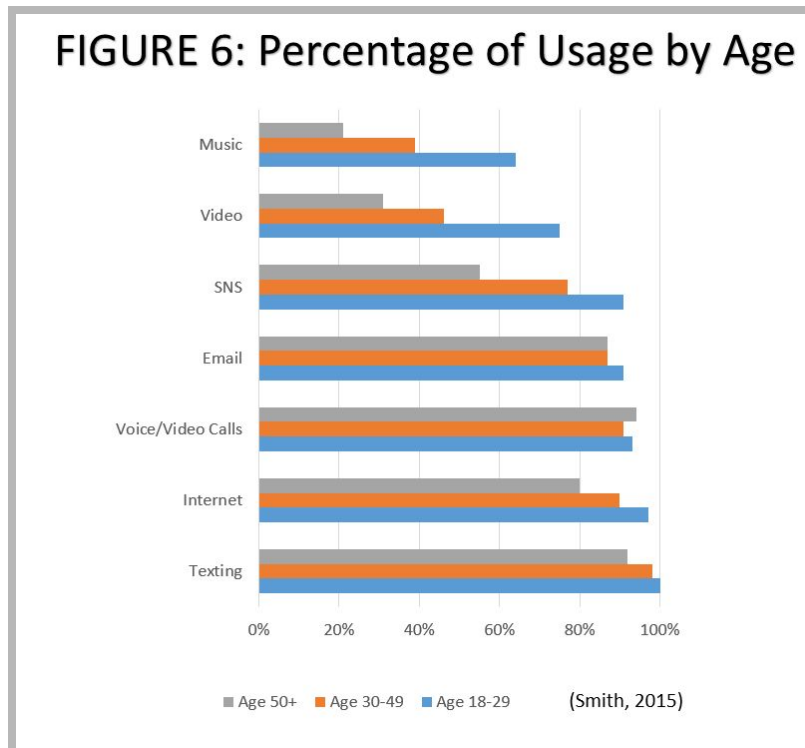


Fig. 6 shows the percentage of usage by age of applications on your average cell phone. As can be seen from this figure, the younger generation finds the most use of text messages and the ability to access the internet (see FIG. 6). It can also be seen that generations older than 50 years do not utilize the full functionality of cell phones when compared to the younger generations (Smith, 2015). Another point to take note of is that the older generation, those over the age of 50, use their phones to make voice calls more than either other generation.

3.7. Over Usage of Cell Phones

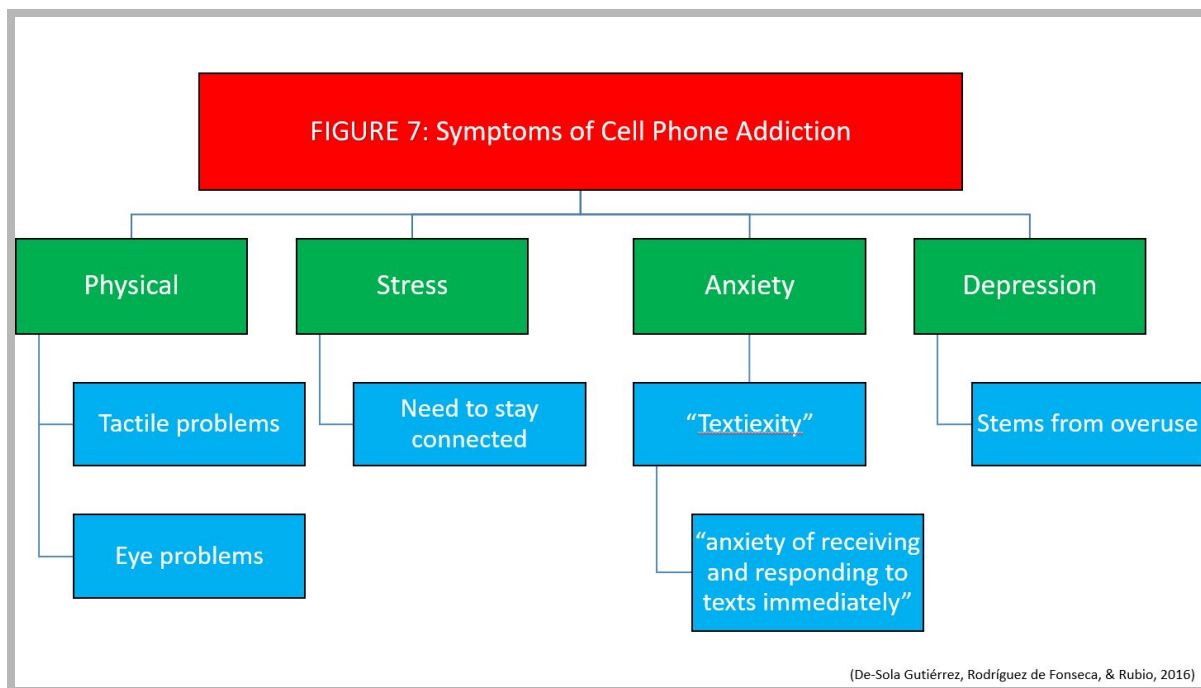
As shown in previous sections, it was found that the use time per day is increasing. For example, using a cell phone for over 5 hours a day in 2004 was considered overuse or “excessive” (Khezhie, P., & Srivastava, A., 2016). However, in 2014 it is now 9 hours or longer that is deemed as overuse or “excessive” (Roberts, J., Yaya, L., & Manolis, C., 2014). It can be easily seen that the cell phone usage time has nearly doubled in the last decade. We also found that the increase in cellular phone function is related to the increase in its use (Khezhie, P., & Srivastava, A., 2016). This is

because over the last decade cell phones have increased in functionality from texting, SNS (such as Line or FaceBook Messenger), to PDA originated applications like calendars, note taking, and alarms.

3.8. Cell Phone Addiction: Definition

According to the *American Society of Addiction Medicine*, cell phone addiction is a chronic disease of "memory of brain reward" and "motivation" ("ASAM Definition of Addiction," n.d.). It is related to or can be associated with biological, psychological, social, and spiritual effects on a person. Individuals are pathologically pursuing rewards or relief by sustenance use and other behaviors. The definition of cell phone addiction by the *US National Library of Medicine - Frontiers In Psychiatry* cell phone addiction is considered to be an impulsive disorder instead of a behavioral addiction (De-Sola Gutiérrez, Rodríguez de Fonseca, & Rubio, 2016). The difference between these two sources is that, Through ASAM Cellphone addiction can clearly be defined, however through NDCI it is considered more of an impulsive behavior with addictive qualities.

3.9. Symptoms of Cell Phone Addiction



As can be seen from FIG. 7, symptoms of cell phone addiction are divided into physical, stress, anxiety, and depression. Some of the symptoms relate to physical symptoms are tactile problems and eye problems (De-Sola Gutiérrez, Rodríguez de Fonseca, & Rubio, 2016). The symptoms of stress arises from the need to maintain continuity. The symptoms of anxiety have become so vast that new pathologies have been created to define them. These include pathologies like “Textiexity” which is defined as “anxiety of receiving and responding to texts immediately” (De-Sola Gutiérrez, Rodríguez de Fonseca, & Rubio, 2016).

3.10. Causes of Cell Phone Addiction

There were two main causes of cell phone addiction that we found. The first is the desire to be connected with someone or the world at any time (De-Sola Gutiérrez, Rodríguez de Fonseca, & Rubio, 2016). This can be caused by not having your cell phone on you or having your cell phone not working. This then can lead to stress. Another cause arises from social unrest. Another example is social anxiety. This can be seen through the term “FOMO”, or the Fear of Missing Out(De-Sola Gutiérrez, Rodríguez de Fonseca, & Rubio, 2016). One example of this comes from one of our sources where he had to go without his phone for an entire month and noticed how much his friends desired to remain in contact at all times (Hanson, L., 2014, Nov 11).With all of these symptoms and causes new pathologies have been created dealing with various variations of cell phone related anxiety and stress (De-Sola Gutiérrez, Rodríguez de Fonseca, & Rubio, 2016).

3.11. Effects of Cell Phone Addiction

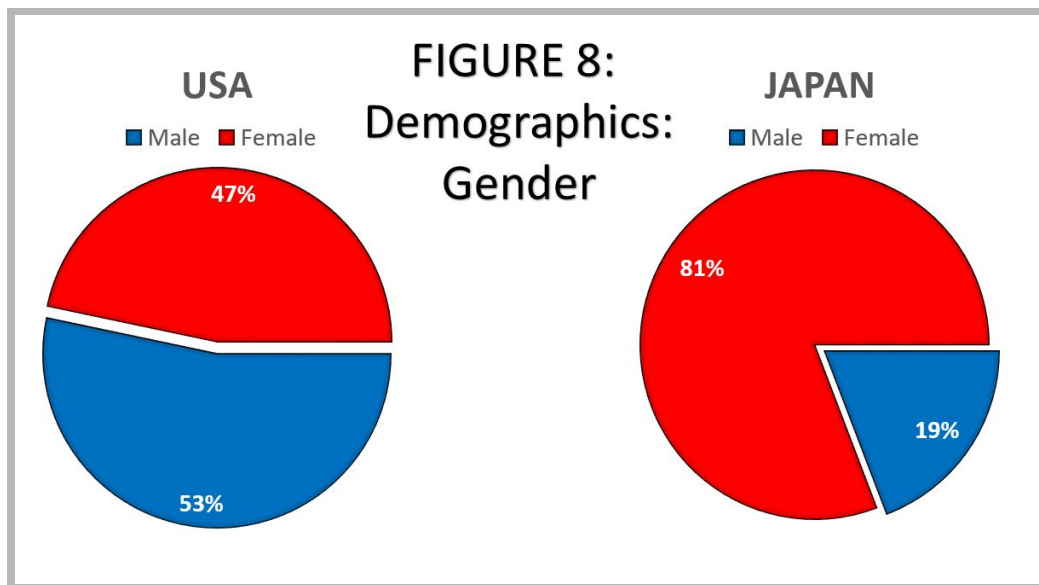
The effects of cell phone addiction are stress, social anxiety and dependency. The effects of cell phone addiction create a negative cycle where a person attempts to relieve one of the effects of cell phone addiction, but in turn ends up either creating it or exasperating it. Mobile phones produce the desire to keep people connected, and at the same time cause stress and anxiety. This also in turn can be related to internet addiction because they share some of the same causes and effects (Ikeda, K., &

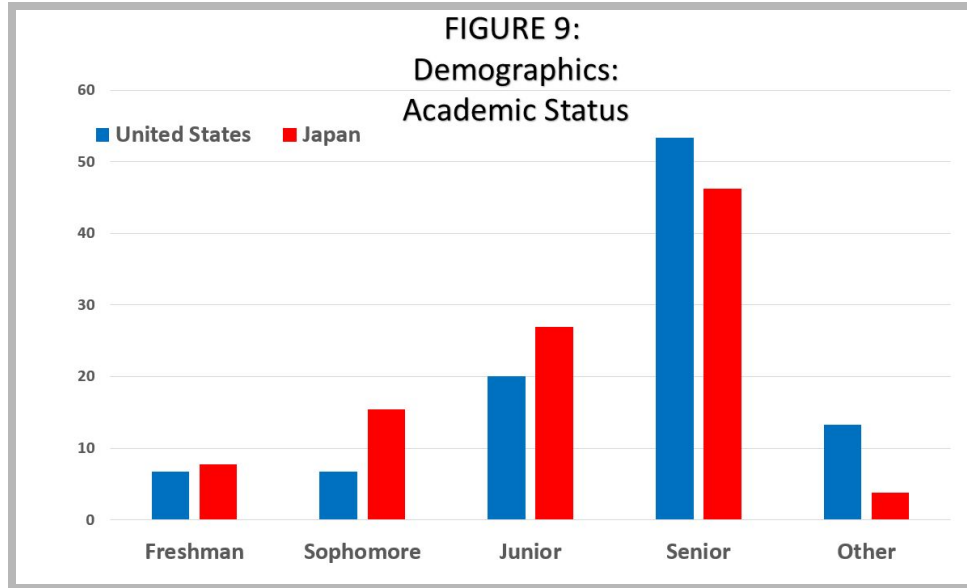
Nakamura, K. 2014). As stated before new pathologies have been created including ones like “Nomophobia” (No-Mobile-Phobia) a phobia of being without one’s cell phone and FOMO (Fear of Missing Out) which is the fear of missing information and being disconnected from the world and other people (De-Sola Gutiérrez, Rodríguez de Fonseca, & Rubio, 2016).

4. Research

4.1 Survey Group

The participants in our study were 26 Japanese university students and 30 university students from the United States, a total of 56 people. About 80% of the Japanese university students who responded were female, although gender ratio of men and women in the United States of the participants was about the same (see Fig. 8). More than half of the respondents were either of Junior or Senior standing in college. (see Figure 9).

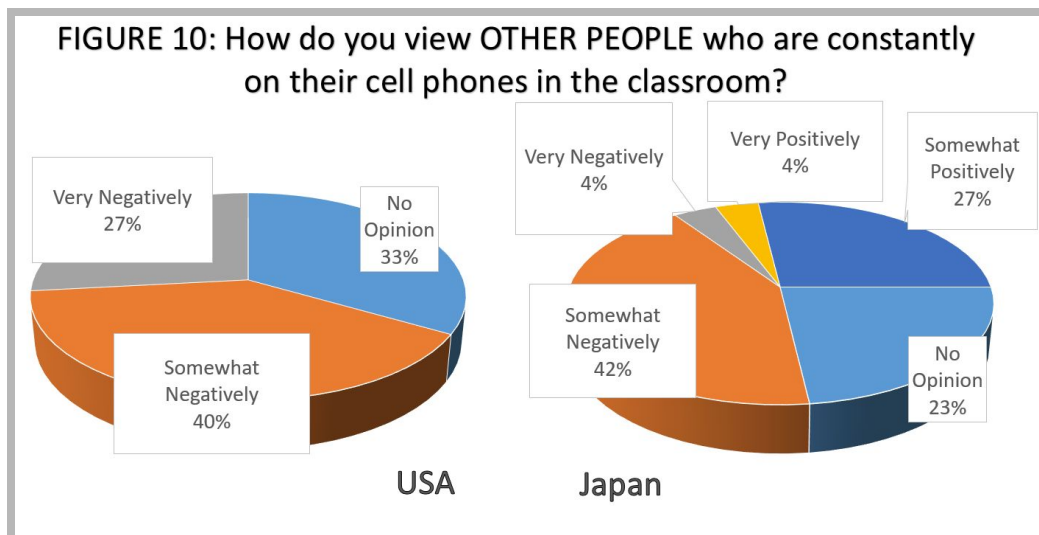




5. Research Question 1

We started our survey with Research question 1, "How do college students in Japan and the United States think about cell phone dependency?" In this section we asked several questions all of which were related to our research question.

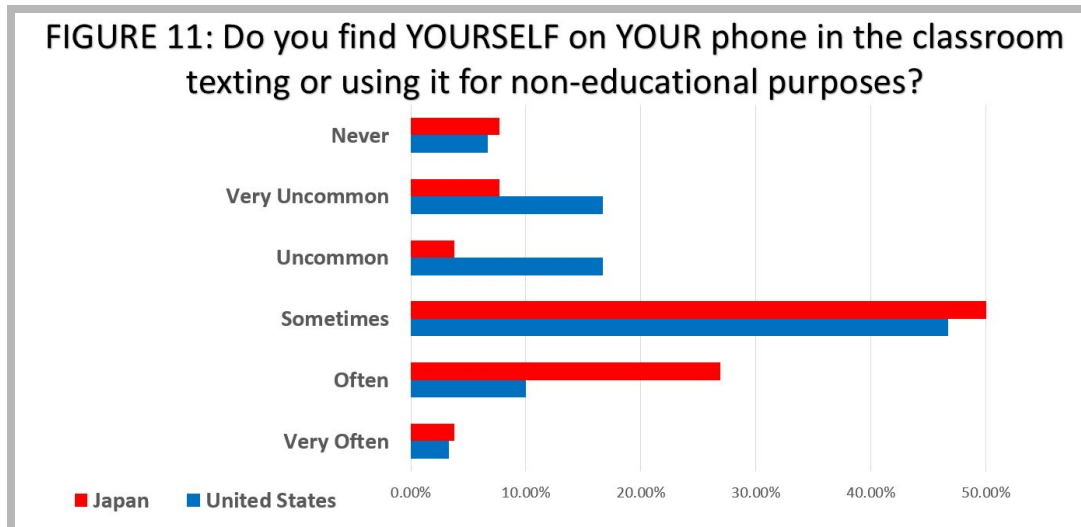
5.1 How do you view OTHER PEOPLE who are constantly on their cell phones in the classroom?



We found that many American college students were thinking more negatively than Japanese college students when it comes to their views (see Figure 10). Most

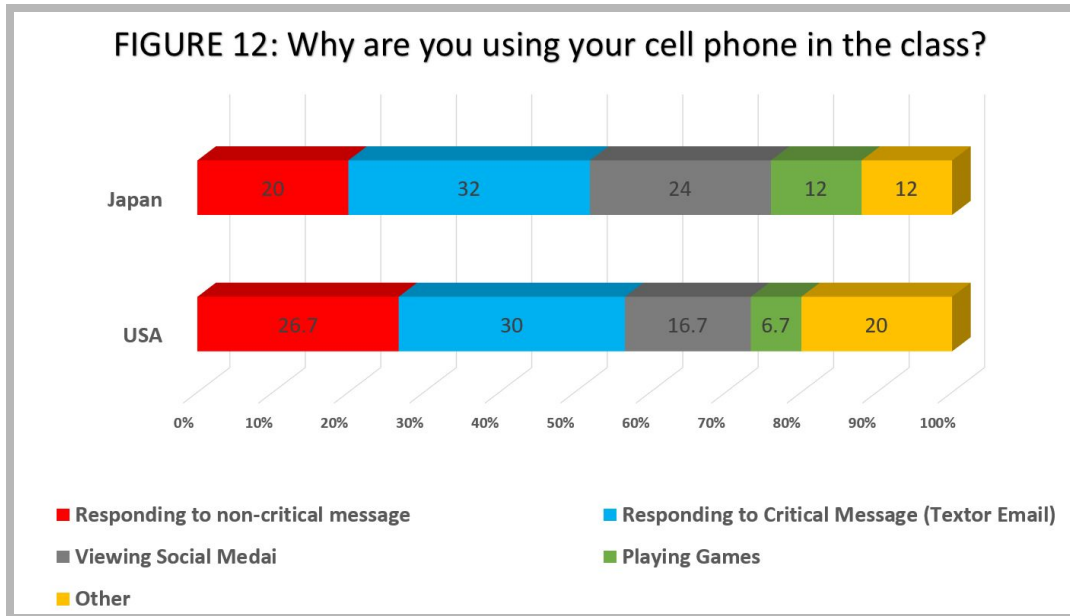
American college students responded negatively, but 31% of Japanese college students answered positively.

5.2 Do you find YOURSELF on YOUR phone in the classroom texting or using it for non-educational purposes?



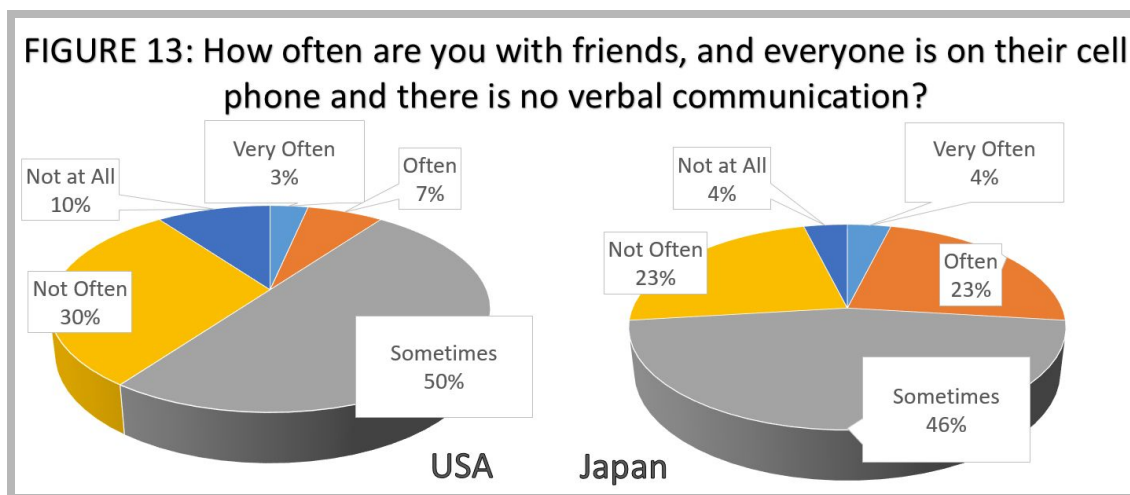
From this question we found that Japanese college students are using cell phones in the classroom more often than college students from the U.S. (see FIG. 11). Approximately 25% of Japanese college students find themselves often using their cell phones during classes compared to American students who responded that they don't use their cell phones much or at all during class.

5.3 (If Sometimes, Often, or Very Often in above question #4) Why are you using your cell phone in the class?



The results from this question were nearly the same for both Japanese and American college students. As can be seen from Figure 12, most people responded that they answer messages and to answer messages that are “Critical Messages”. However, the definition of “Critical Messages” may vary considerably from person to person.

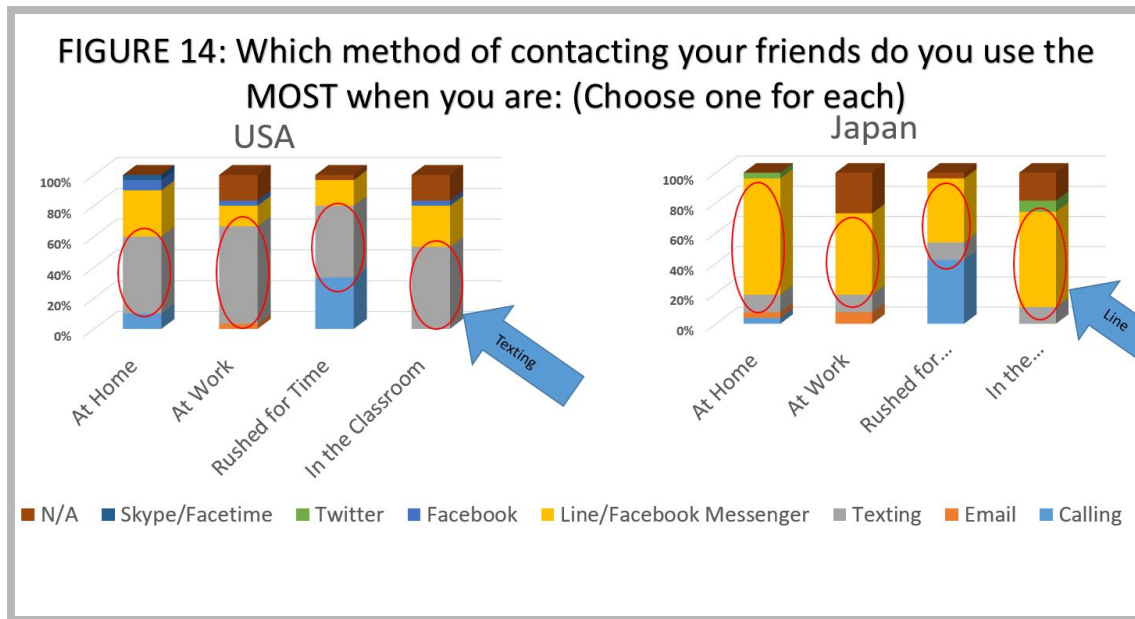
5.4 How often are you with friends, and everyone is on their cell phone and there is no verbal communication?



From this question we found that more than 60% of Japanese students and American students experience this type of situation (see FIG. 13). Both American

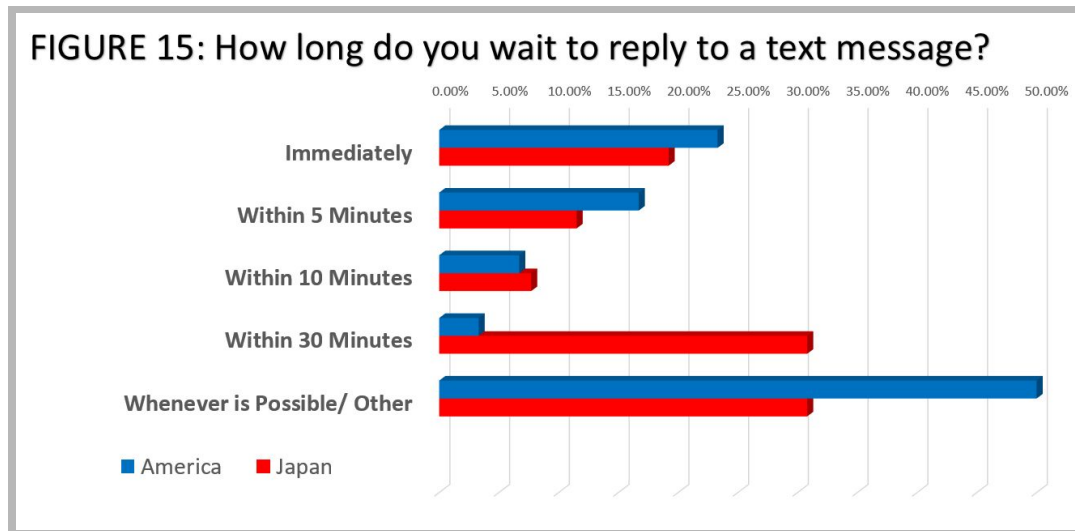
students and Japanese students can communicate with people who are not nearby through their cell phones rather than hold a conversation with someone nearby. From these results, we can infer that the way people communicate in a conversation with others who are nearby is changing.

5.5 Which method of contacting your friends do you use the MOST when you are...?



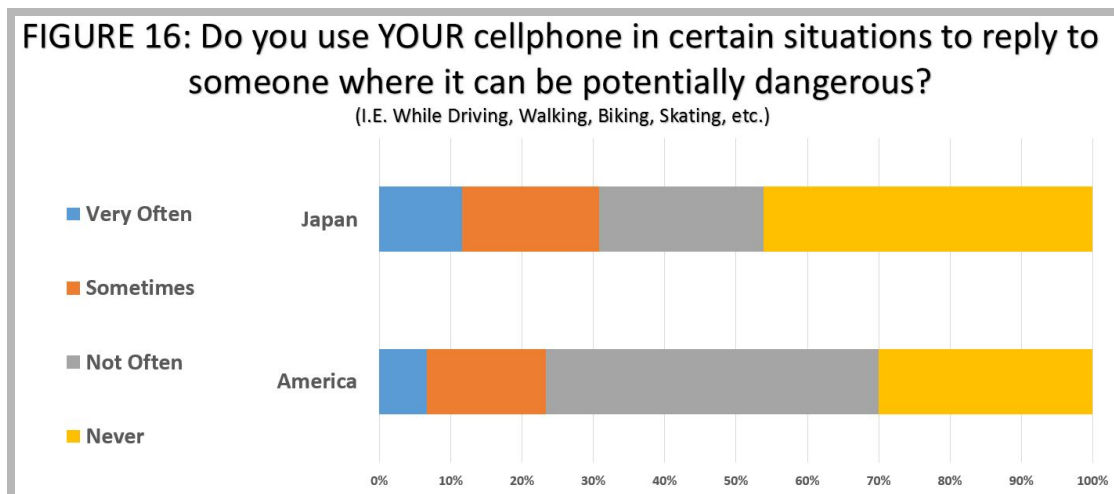
When it comes to which method to best use when contacting friends, text messages are most used in the United States but in Japan Line was the popular choice (see Figure 14). Line is an application commonly used in Japan and it is not widely used in the United States. Line is much more popular in Japan than it is here in the United States, especially as a form of communication.

5.6 How long do you wait to reply to a text message?



For this question, it was found that college students in Japan and the United States who receive a text message either reply immediately or reply within 30 minutes (see FIG. 15). However, in the case of college students in the United States, we found that American college students prefer to reply in a much faster fashion.

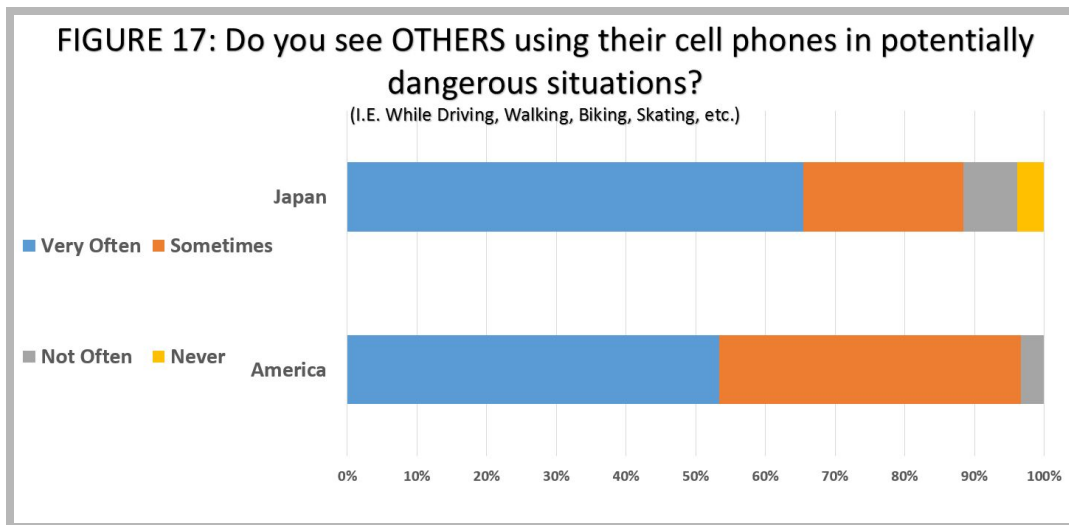
5.7 Do you use YOUR cellphone in certain situations to reply to someone where it can be potentially dangerous? (I.E. While Driving, Walking, Biking, Skating, etc.)



In response to this question, both university students in the United States and Japan responded that most of them would not use cell phones under such

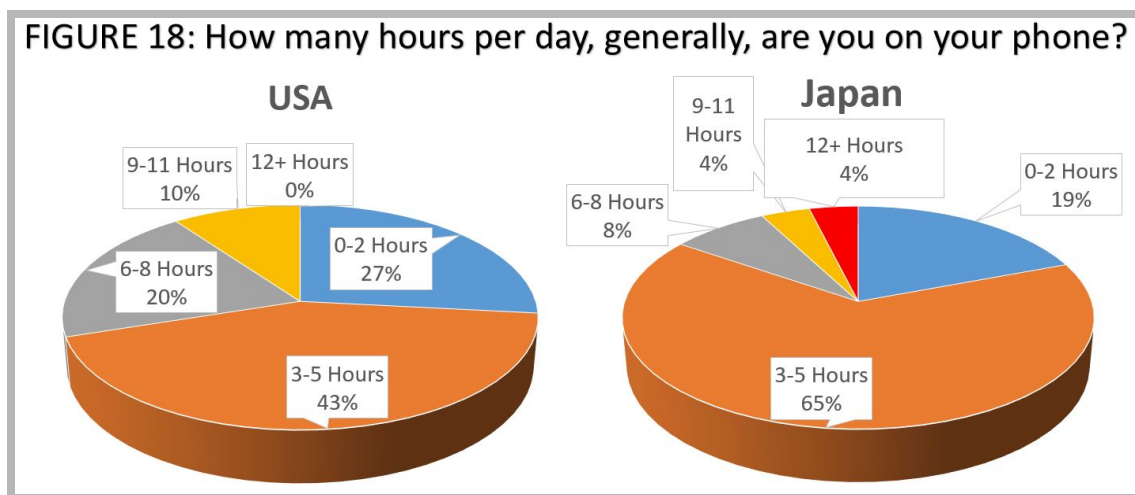
circumstances (see Figure 16). Approximately 80% of American college students answered not often and never with approximately 70% of Japanese college students answering not often and never.

5.8 Do you see OTHERS using their cell phones in potentially dangerous situations? (I.E. While Driving, Walking, Biking, Skating, etc.)



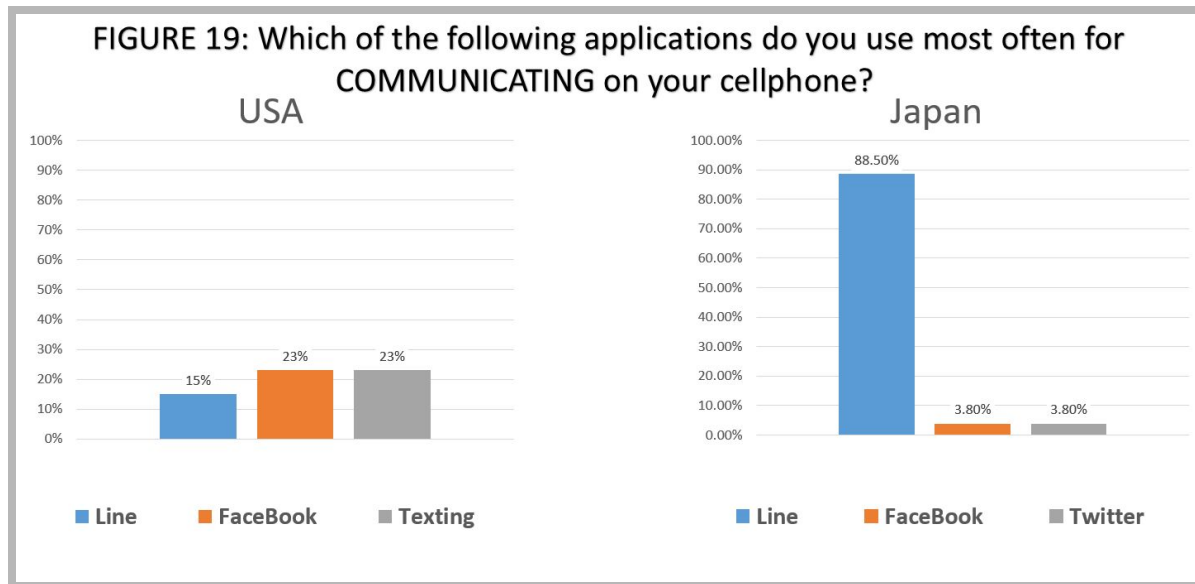
As you can see from Figure 17, almost 90% of our respondents stated that they see other people driving, walking or biking while using their cell phones. From this we can see that people sometimes use their phones in these potentially dangerous situations without even thinking or noticing it.

5.9 How many hours per day, generally, are you on your phone?



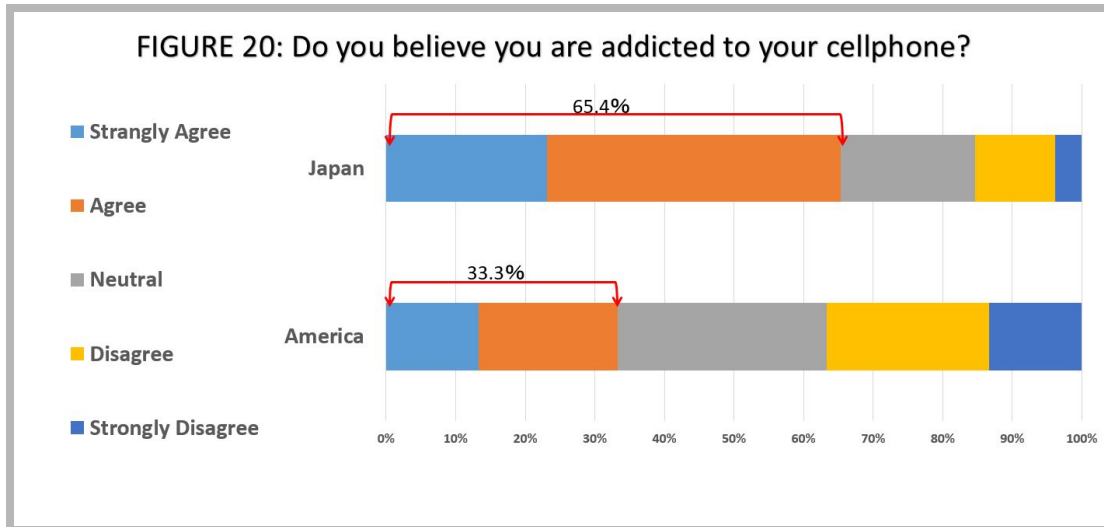
For this question, American students and Japanese students average 3-5 hours of cell phone usage per day. However, in comparison, college students in the U.S. show tendencies to use their cell phones for longer periods of time (see FIG. 18).

5.10 Which of the following applications do you use most often for COMMUNICATING on your cellphone?



As you can see from Figure 19, the most popular forms of communication are mainly text messaging and facebook in the United States but in Japan the Line is most commonly used. This is most likely to do with how popular Line is in Japan when compared to the United States.

5.11 Do you believe you are addicted to your cell phone?



For this question, the difference between college students who think that they depend on mobile phones is about 30%, with American college students stating that they do not depend on cell phones as much as university students from Japan, as can be seen from FIG. 20. However, as previously shown, on average, American college students frequently use their cell phones for longer periods of time when compared to Japanese college students.

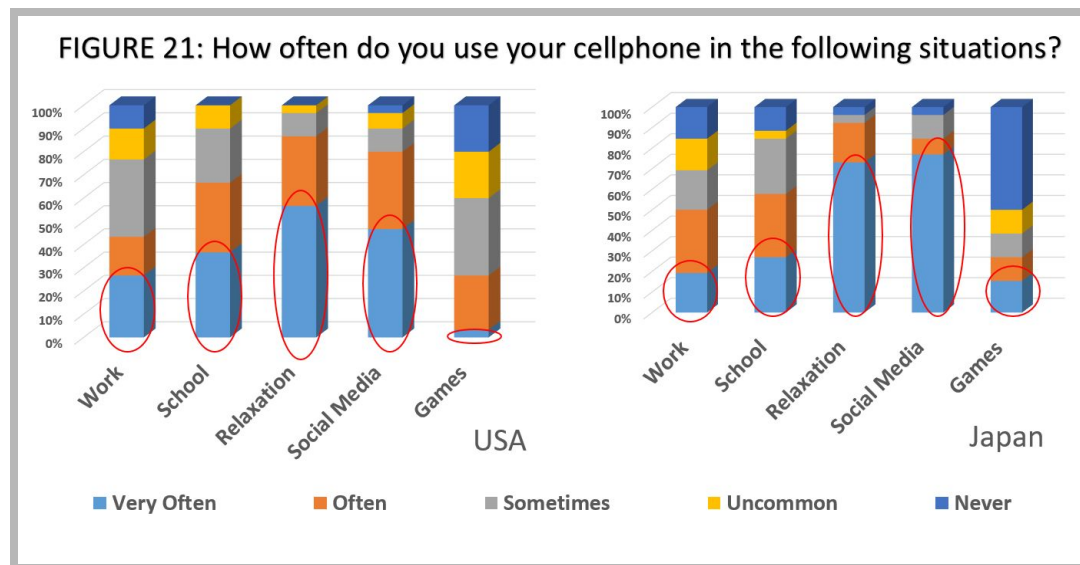
5.12 Research Summary of Research Question 1

From our first research question we found that both Japanese and American college students tended to use cell phones excessively. We also learned that students from both the US and Japan feel negatively about cell phones addiction and the use of cell phones in the classroom. American students are using their cell phones for a longer periods of time; however, it turned out that American students tended to deny being cell phone addicts. The primary forms of communication among college students in American is text messaging and facebook, and Japanese college students mainly use Line. We also found that both Japanese and American students often see cell phones being used in dangerous situations, but it is interesting to note that both state that they do not usually use mobile phones in dangerous situations.

6. Research Question 2

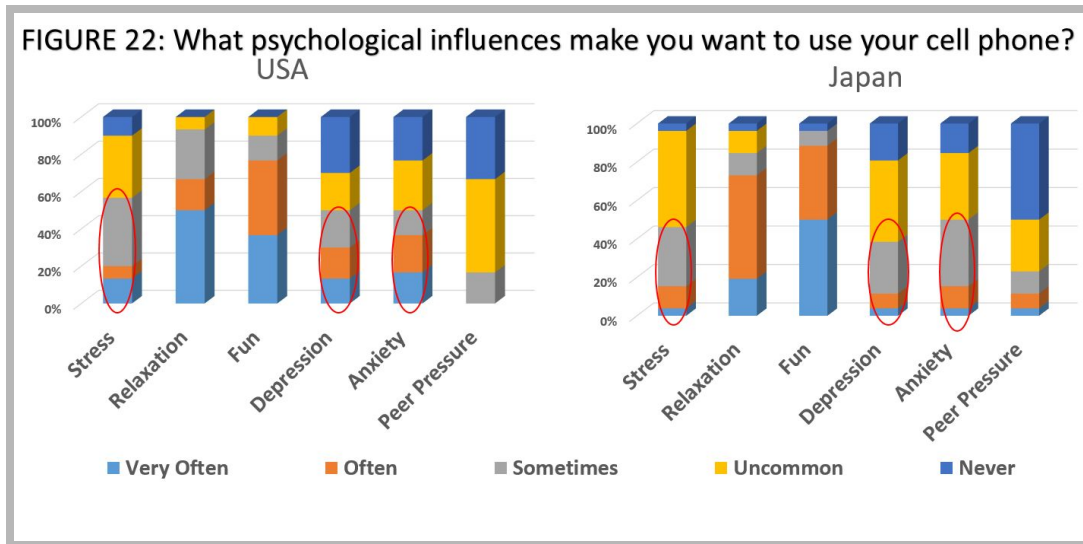
Next, Research Question 2, “What causes Japanese and American university students excessive use of cell phones?”

6.1. How often do you use your cellphone in the following situations?



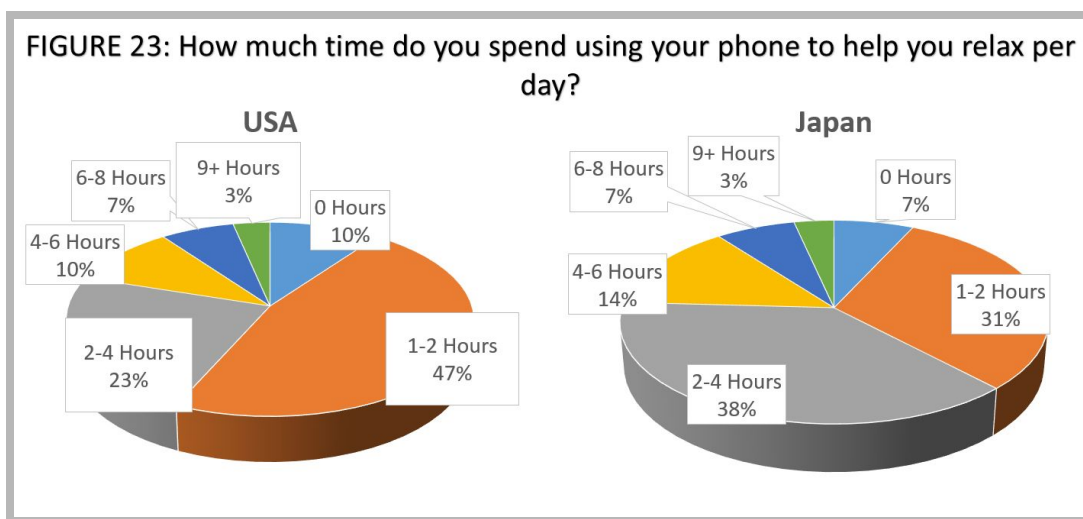
Regarding this question, American students often use their their cell phones, however Japanese college students tend to use their cell phones more often than American college students (see Figure 21). Many Japanese students are using their cell phones to watch social media when they want to relax.

6.2. What psychological influences make you want to use your cell phone?



So why do people use the cell phone so much? As you can see from Figure 22, stress is the biggest factor. People tend to use cell phones when their stress is high. Following that is depression and anxiety.

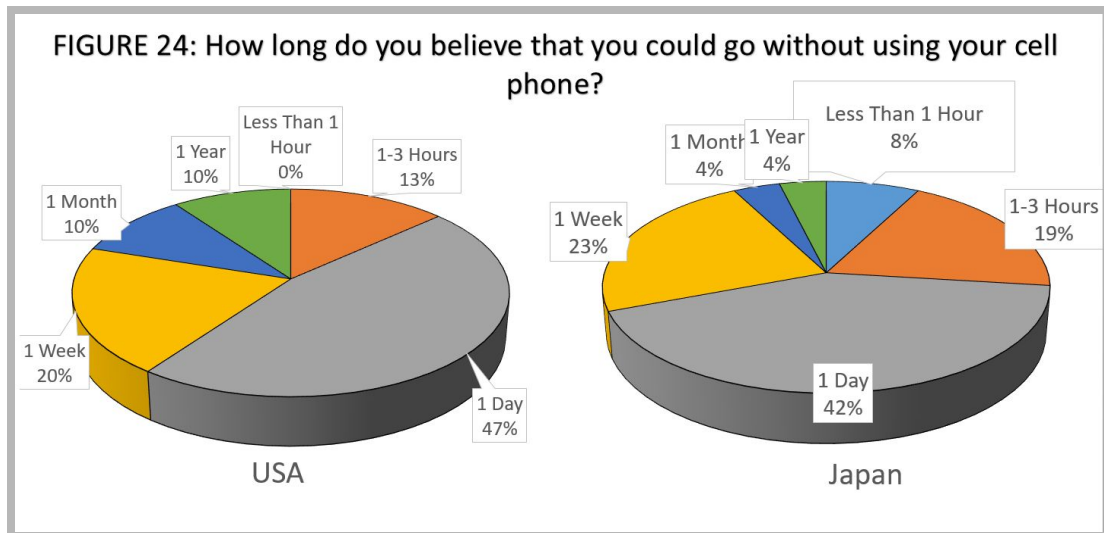
6.3. How much time do you spend using your phone to help you relax per day?



For relaxation, Japanese students use cell phones more frequently than

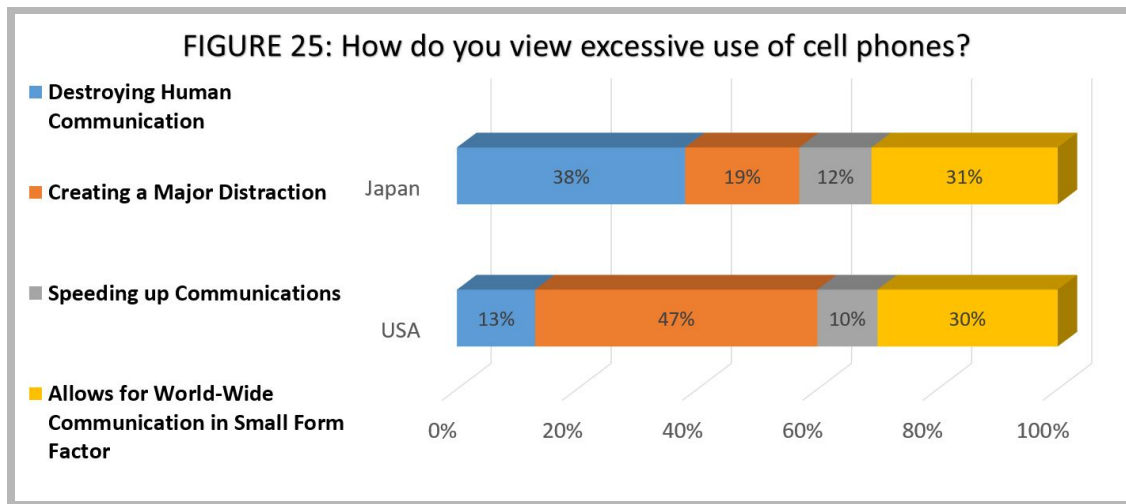
American students (see Figure 23). 23% of American students use cell phones for 2 to 4 hours a day to relax. 38% of Japanese students use cell phones for 2 to 4 hours a day for relaxation.

6.4. How long do you believe that you could go without using your cell phone?



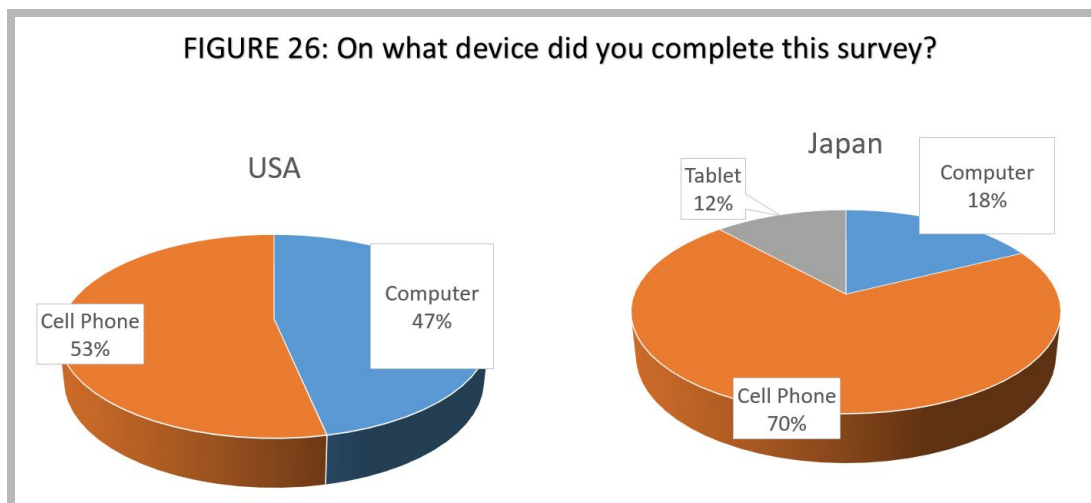
In response to this question, there was not much difference between the answers of Japanese students and American students. The most common response was not to use their cell phone all day, the next was not to use it for a week (see Figure 24). Generally, American students responded that they could go slightly longer without their cell phones than Japanese students.

6.5. How do you view excessive use of cell phones?



As can be seen from Figure 25, regarding the frequent use of cell phones, Japanese college students tend to regard cell phones as "destroying human communication", while American college students say that it "Causes a major distraction".

6.6. On what device did you complete this survey?



In response to this question, the students of both countries had more students using their cell phones rather than computers and tablets (see FIG. 26). However, Japanese students used their cell phones by 20% more than American students.

6.7. Research Summary of Research Question 2

Both Japanese students and American students have a negative view on cell phones. The use of cellphones is strongly influenced by the cultural environment of the country. Students in the United States have a view that cellphones are being used in dangerous situations, whereas Japanese often use mobile phones when they are with friends, which has a bad influence on human communication. Furthermore, it was also found that the reasons for the excessive use of cell phones are derived from stress, anxiety, depressive symptoms and so on. For example, there is pressure created from the need to reply immediately to text messages. On the other hand, cell phones were also found to be used to relax by listening to music, playing games, watching videos and so on.

7. Overall Conclusion

Mobile phones have both good and bad influences on us. Examples of good influences can include “speeding up communication” and “keeping in constant communication with other people.” On the other hand, examples of bad influences that communication by cell phones can make are the “destruction of human communication” and the fact that cell phones can lead to “causing major distraction.” We also learned that cell phone addiction is deeply related to stress, anxiety, and depression. Cell phones are very convenient and we find it difficult to live without them today. However, we learned through this research that no matter how convenient and helpful a tool is, better or worse, it is the responsibility of the user to use it within its limits and safely.

8. Limitations of the Study and Future Studies

As for limitations of this research, we can't find it possible to generalize this result because it was from a small survey group from a specific area. As for future research subject we would like not only for more university students to participate in the survey but also primary or elementary school students, junior high school students, and high school students to participate in the survey. We also want to investigate whether there is are differences on cell phone addiction depending on gender, and also to investigate the use of various cell phones such as using them for school, for relaxation, or for work.

9. Acknowledgements

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