Perceptions of Mobile Phone Use in Public Settings:
A Cross-Cultural Comparison

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This study entailed a cross-cultural comparison of perceptions of mobile phone use in select public settings, including a movie theater, restaurant, bus, grocery store, classroom, and sidewalk. A sample of participants from the U.S. Mainland, Hawaii, Japan, Taiwan, and Sweden was surveyed for social acceptability assessments of talking on a mobile phone in each of these locations. As hypothesized, settings involving collective attention were considered least acceptable for talking on a mobile phone. Results also revealed numerous cultural similarities and differences. Taiwanese participants tended to report more tolerance for mobile phone use in a theater, restaurant, and classroom than did participants from the other cultural groupings. Japanese participants also tended to be more tolerant of mobile phone use in a classroom, but less tolerant of use on a sidewalk and on a bus than were the other participants. The discussion offers theoretical implications of the findings.

In recent years the mobile phone has rapidly spread into our daily lives, with subscriptions exploding into the billions worldwide (International Telecommunication Union, 2007). Not surprisingly, the widespread adoption and use of the mobile phone has brought about an array of new social implications. For example, individuals use the technology in distinctive ways to demonstrate and reinforce social networks (Campbell and Kelley, 2006; Johnsen, 2003; Licoppe, 2003; Ling and Yttri, 1999, 2002; Plant, 2001; Taylor and Harper, 2001). In addition, many users consider the mobile phone an extension of their physical selves (Gant and Kiesler, 2001; Hulme and Peters, 2001; Oksman and Rautiainen, 2003) and symbolically representative of their identities (Campbell, 2008; Campbell and Russo, 2003; Green, 2003; Katz and Sugiyama, 2006; Ling, 2003; Ling and Yttri, 1999, 2002; Lobet-Maris, 2003; Skog, 2002; Strocchi, 2003; Taylor and Harper, 2001). Another social matter concerning mobile phone use, and the focus of this article, is use in public settings.

Whether or not one owns a mobile phone, we all have to deal with this rapidly emerging technology because it is used everywhere, including sidewalks, buses, trains, grocery stores, restaurants, movie theaters, churches, and classrooms. With the appropriation of the mobile phone 'across more settings and places, the social norms associated with the use of wireless technology in different places fail to become differentiated and clear' (Gant and Kiesler, 2001: 130). The uncertainty surrounding norms for mobile phone use in public stems from the conflicting nature of private and public space. That is, norms for particular locations often conflict with norms for interaction during a phone call (Love and Kewley,

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2005; Palen, Salzman, and Youngs, 2001), causing mobile phone use in public to be as intrusive for some as it is convenient and rewarding for others.

Complicating matters is the nature of the mobile phone as a medium of communication. For instance, mobile communication around others gives rise to the challenge of absent presence. As Gergen explained, 'We are present but simultaneously rendered absent; we have been erased by an absent presence' (2002: 227). When one uses the mobile phone in public settings, one removes oneself from his/her surroundings, in a sense prioritizing the absent other over those who are physically co-present. Voice calling in public is particularly problematic because it can exacerbate absent presence and force bystanders into the uncomfortable position of eavesdropping (Ling, 1996).

Considering the prevalence of mobile phone use in public places, this practice is a near-universal social concern and an opportunity for research on acceptable use. According to Love and Kewley, 'There is a lively public debate concerning whether or not it is acceptable to use mobile phones in restaurants, streets, and parks or on public transport' (2005: 273). This study aimed to shed light on the problem by exploring the acceptability of mobile phone use in select public settings. Without doubt, norms for social behavior vary according to culture (Hall, 1959, 1965, 1979; Hofstede, 1980; Goffman, 1963). Therefore, research examining acceptable mobile phone use in public should account for the role of culture in perceptions and practices. Toward this end, this article reports findings from a cross-cultural comparison of perceptions of mobile phone use in select public settings. Participants from the U.S. Mainland, Hawaii, Japan, Taiwan, and Sweden were surveyed about their attitudes of mobile phone use in/on theaters, stores, sidewalks, buses, classrooms, and restaurants.

Theoretical Grounding and Relevant Literature

Although he preceded the mobile phone, Erving Goffman's dramaturgical metaphor for social interaction serves as a useful lens for understanding acceptable mobile phone use in public settings (Fortunati, 2003; Humphreys, 2005; Ling, 2002, 2004). According to Goffman (1959), individuals present themselves on a stage during social interaction, and just like a theater stage, the social stage contains both front and back areas. The front stage refers to the physical and social surroundings where the presentation of self is enacted, while the back stage consists of artifacts and information that people shield from others in their efforts to perform impression management. Competent front stage performance involves defense strategies that prevent back stage breaches (Fortunati, 2003), which is especially challenging for a mobile phone user because s/he must juggle a dual front stage, comprised of the physical surroundings with co-present others and the conversation with the person on the other end of the phone (Ling, 2002). As noted, these two types of stages often have competing norms (Humphreys, 2005; Love and Kewley, 2003; Palen, Salzman, and Youngs, 2001).

Goffman (1963) explained that normative front stage performances also depend on the level of expected involvement, or the capacity to give attention to the activity at hand. Goffman explained, 'To be engaged in an occasioned activity means to sustain some kind of cognitive and affective engrossment in it, some mobilization of one's psychobiological resources; in short, it means to be *involved* in it' (1963: 36, italics in original). Expectations for involvement vary with the focus of the social occasion. During *fully-*

focused gatherings, everyone in attendance is collectively engaged in the same activity. When gatherings are *partially-focused*, some participants are collectively engaged in something while others are not, and *multi-focused* gatherings involve more than one encounter occurring in the same setting. Because they call for a collective display of involvement, mobile phone use during fully-focused occasions tend to be less socially acceptable than use in partially-focused or multi-focused situations. Indeed, Haddon (1998) found mobile phone users to be least likely to have their handsets turned on at events such as plays or shows. In addition, Wei and Leung (1999) found that classrooms, churches, and restaurants were among the most irritating places for mobile phone use, while public transportation vehicles, streets, and shopping centers were among the least. Caporeal and Xie (2003) found that participants turned their mobile phones off or switched them to silent mode in places such as theaters, concert halls, churches, and meetings, and Campbell and Russo (2003) reported that study participants were particularly appalled by mobile phone use in classrooms and movie theaters. In addition, Campbell (2006) found that a sample of faculty members and college students considered the mobile phone a nuisance during class to the extent that both groups generally supported formal restrictions for use in this particular setting. These studies indicate trends that resonate with Goffman's discussion of involvement in fully-focused occasions and provide justification for the following hypothesis:

Hypothesis: Settings involving collective attention will be considered significantly less acceptable for talking on a mobile phone than those with a more individualized level of focus.

It is important to be mindful that practices and expectations for behavior in public are situated in a cultural context. Goffman himself recognized this when he acknowledged, 'the idiom of subordinate involvements differs widely from one cultural group to another' (1963: 45-46). Others have also argued that culture plays an important role in how individuals perceive and use social spaces (see for example, Edward Hall's theory of proxemics, 1965). Although research on the cultural nuances of normative mobile phone use in public is sparse, Okabe and Ito (2005) made a valuable contribution with their rich account of the development of norms for mobile phone use on Japanese public transportation. Drawing from interviews, ethnographic observations, and socio-historical developments, Okabe and Ito explained that as the mobile phone (known as 'keitai') transitioned from a business tool to a general social technology in Japan, voice calling became increasingly less acceptable on crowded Japanese trains and buses. According to Okabe and Ito, efforts to curb voice calling can be seen in both formal and informal controls, including recorded broadcasts and posters informing passengers of restrictions, as well as nonverbal gestures by co-present others. The authors pointed out that Japanese youth played an important role in the development of this social convention as teens came to embrace the technology as a primary form of connecting with peers. The development of the mobile internet in Japan also played an important role as mobile e-mail provided an acceptable alternative to voice calling. In short, the proliferation of the technology as a social tool, widespread adoption and use by teens, and the availability of the mobile internet in Japan lead to the social norm of 'no voice, e-mail okay' on Japanese public transportation. There is anecdotal evidence to suggest this convention applies in Japanese classrooms as well, although perhaps to a more limited degree. That is, a sample of Japanese students reported that sending and receiving mobile messages during class is common, but that voice calling 'would be going too far' (Ito and Okabe, 2005: 270).

Okabe and Ito (2005) approached their research using the social construction of technology (SCOT) as theoretical framing (Pinch and Bijker, 1993). This orientation draws attention to the role of social actors, historical factors, and social context in examining the development, adoption, and use of technologies. Campbell and Russo (2003) adopted a similar approach to examine how various perceptions and uses of mobile telephony are shaped in tightly knit personal communication networks. Drawing from both qualitative and quantitative data, the authors found that the adoption, conceptualization, and use of mobile phones tend to be significantly influenced through interaction within one's personal network. In other words, individuals are socially contagious in how they think about and use the technology. While Campbell and Russo (2003) illustrated how perceptions and uses of the mobile phone are socially constructed in small-scale social networks, Okabe and Ito (2005) demonstrated how the social construction of technology occurs at the larger cultural level. The present study draws from this line of research and theory to explore possible cultural distinctions in perceptions of acceptable mobile phone use in the select public settings. That is, because technologies are socially constructed in a particular context, one might anticipate significant attitudinal differences among the cultural groupings surveyed in this investigation. It is especially reasonable to expect differences when comparing Japanese attitudes about voice calling on public transportation to those of the other participants.

Yet, there is also theoretical justification for anticipating cross-cultural similarities. Drawing from research in several countries all over the world, Katz and Aakhus (2002) suggested there are discernable mobile communication trends that, despite cultural variation, seem to be rather universal in nature. These pandemic trends manifest in a number of aspects of social life, such as teen use of the technology for social networking, new forms of coordination, tensions between autonomy and privacy, and unanticipated consequences of the technology. One trend that is particularly germane to this study is the transformation of public space into private space through mobile communication practices. Katz and Aakhus explained, 'In many countries, the social landscape is changing … How people socialize and behave in public spaces, including cafes and train stations, is modified and shaped by the presence of and response to the mobile' (2002: 302).

Katz and Aakhus attributed these cross-cultural mobile communication trends to their notion of *Apparatgeist*. Apparatgeist, which literally means 'spirit of the machine,' is a theoretical orientation that draws attention to a shared logic people have about communication – a common orientation toward 'the means to communicate and interact socially, which is fundamental to humans' (2002: 308). The authors argued that this logic of *perpetual contact* 'underwrites how we judge, invent, and use communication technologies' (307), resulting in coherent patterns and discernable trends. The logic of perpetual contact is fueled by a host of social and technological factors that are both explicit and implicit in nature. Examples of social factors are values, roles, and norms, while technological factors include features such as handset size, design, and ease of use. According to Katz and Aakhus, these and numerous other social and technological aspects feed into the logic of perpetual contact, which lead to consistencies in how people think about, respond to, use, and reject personal communication technologies (PCT). This orientation is fitting considering mobile communication in public settings has become a seemingly universal occurrence, and complaint, all over the world. In addition, Campbell (2007) reported numerous cross-cultural similarities in perceptions and uses of mobile telephony. In that study, mobile phone users from the U.S. Mainland, Hawaii, Japan, Taiwan, and Sweden were surveyed to compare their perceptions of the mobile

phone as fashion, use for safety/security, instrumental use, expressive use, and attitudes about use in public. The findings revealed some differences, but many more similarities. One area where both differences and similarities were found was mobile phone use in public, which was treated as a general attitude in that study. The present study is a follow-up in that it explores attitudes about mobile phone use in particular locations among the same sample of individuals from the cultural groupings[1].

Clearly there are reasons to expect both differences and similarities in cross-cultural research on mobile phone use in public settings. On the one hand, norms and expectations are socially constructed within a particular cultural context. On the other hand, research shows that there are coherent patterns and trends in how people from disparate cultures think about and use the technology. Therefore, rather than using SCOT and Apparatgeist to drive testable hypotheses, this study utilizes them as heuristic framing for exploration of the following research question:

Research question: In what ways do members of the cultural groupings differ in their perceptions of mobile phone use in certain public settings?

Method

Participants

Citizens from more than 30 countries and taking courses at a highly international university in Hawaii volunteered for this study. The remarkably diverse student body can be attributed to the university's geographic location and core mission to promote global citizenship by bringing students from around the world together in scholarship. Replicating methods used in the preceding cross-cultural study of mobile telephony (Campbell, 2007), only cultural groupings large enough to allow for statistically significant differences were included in the analysis. After removing participants from sparsely populated sub-samples, the dataset consisted of 271 participants from the following five groupings: U.S. Mainland (n = 101), Hawaii (n = 57), Japan (n = 39), Taiwan (n = 38), and Sweden (n = 36). The U.S. Mainland and Hawaii were treated as separate cultural groupings for the purposes of this study. This decision was based on the approach used in the previous cross-cultural investigation and commonly recognized distinctions in heritage, geography, dialect, and climate. Participants from Japan, Taiwan, and Sweden had been living in Hawaii for an average of two years, and those from the U.S. Mainland had been living there for about three-and-a-half. The mean age of participants was 25 (62% female, 38% male). Fifty-one percent of the participants were seeking an undergraduate degree, 33% were seeking a graduate degree, and the remainder did not report type of degree sought. The sample consisted of 231 mobile phone users and 40 non-users[1]. Participants reported an average of 750 minutes of use per month and four years of experience using the technology.

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[1] The sample used for this investigation includes 40 non-users of mobile phones who were excluded from the previous study because it assessed uses as well as attitudes about the technology.

Instrumentation

An original self-report survey containing 61 items was used to assess perceptions and uses of mobile telephony and demographic information. Fifteen of the items were used for this study, and the others were part of other research, including the preceding cross-cultural investigation (Campbell, 2007). For items assessing socially acceptable mobile phone use in the select locations, participants were asked to respond using a five-point Likert-type scale, with response options ranging from 'Strongly disagree' to 'Strongly agree.' Participants were instructed to either provide a written response or circle the correct response option for the demographic items. For example, participants were asked which country they were from and how long they had lived in Hawaii. Participants from the U.S. were asked to specify whether they were from the Mainland or Hawaii.

For the purposes of this study, mobile phone use in public refers only to talking on the mobile phone, not use of other services such as voice mail or text messaging. As noted, voice calling is distinctive in that it exacerbates the problem of absent presence (Gergen, 2002) and forces bystanders into the discomfort of eavesdropping (Ling, 1996). Perceptions of acceptable mobile phone use in particular locations were assessed using unitary items measuring the social acceptability of talking on a mobile phone (a) in a movie theater, (b) in a restaurant, (c) on a bus, (d) in a grocery store, (e) in a classroom, and (f) on a public sidewalk with others around. The decision to include these particular locations was influenced by public settings examined in research reported in the literature above and the desire to assess settings that reflect a range between fully-focused (e.g., classroom) and multi-focused (e.g., store) occasions (Goffman, 1963). Participants were asked to provide their generalized perceptions of mobile phone use in these settings by responding to the following prompt (the locations and Likert-type response options were listed below the prompt): 'It is socially acceptable for someone to talk on his/her mobile phone while he/she is …' (a) in a movie theater … (b) in a restaurant, etc. In the survey, participants were instructed to interpret the phrase 'socially acceptable' as not rude or inappropriate. Descriptive statistics for the location items are presented in Table 1.

Table 1

Descriptive Statistics for Social Acceptability Ratings for Mobile Phone Use

Locations	U.S. Main M(SD)	Hawaii M(SD)	Japan M(SD)	Taiwan M(SD)	Sweden M(SD)	Overall M(SD)
Movie theater	1.36(.92)	1.47(1.05)	1.76(1.46)	2.21(1.36)	1.28(.74)	1.55(1.12)
Classroom	1.49(.99)	1.77(1.12)	2.26(1.59)	2.39(1.31)	1.39(.96)	1.77(1.21)
Restaurant	2.32(1.17)	2.65(1.13)	2.66(1.26)	3.34(1.02)	2.28(1.11)	2.57(1.19)
Bus	3.44(1.10)	3.39(1.06)	2.53(1.22)	3.37(.94)	3.50(1.08)	3.30(1.12)
Grocery store	3.72(.98)	3.67(.99)	3.55(1.18)	3.61(1.00)	3.83(.91)	3.69(1.00)
Sidewalk	4.00(1.04)	3.73(1.18)	3.34(1.15)	3.76(.94)	4.08(1.16)	3.83(1.11)

Notes. Range = 1-5. Higher mean scores reflect increased social acceptability.

Procedure

With permission from the university's institutional review board, surveys were administered in the classrooms of undergraduate and graduate level courses in a variety of topics. Respondents were asked to participate by completing the survey in the classroom during class time. Participation was completely voluntary, and respondents received no credit or other incentive for completing the survey. In addition to verbal assurances that participation was voluntary and responses would be kept confidential, participants received an informed consent form explaining these conditions. Surveys typically took about 10-15 minutes to complete.

Results

Findings for the Hypothesis

The study hypothesized that locations which tend to involve fully- (i.e., collective) focused occasions would be significantly less acceptable for mobile phone use than those supporting more individualized levels of focus. To test this hypothesis, differences in assessments of the locations were investigated using a repeated measures analysis of variance (ANOVA) procedure, with the dependent variable being a social acceptability rating on a scale of one-to-five and the within-subjects factor being location with six levels: movie theater, restaurant, bus, grocery store, classroom, and sidewalk. Results indicated a significant effect for location, Wilks' Λ = .39, F (5, 264) = 83.78, p < .001, partial η^2 = .61. To follow up on this effect, pairwise comparisons were conducted on every possible pairing of the locations. To protect against Type 1 error, comparisons were tested at the .05 divided by 15 (for the 15 pairings) or .003 level. Table 2 shows that 14 of the 15 comparisons yielded statistically significant differences, and effect sizes ranged from moderate (d = .30) to quite large (d = 1.22) (Green, Salkind, and Akey, 2000). The only comparison that was not statistically significant was that between social acceptability for using a mobile phone on a sidewalk and using one in a grocery store, however this test closely approached significance with p < .009. These results show that location significantly and consistently affected perceptions of acceptable of mobile phone use among the sample. Considering the level of focus for these locations, results reveal trends that support the hypothesis. That is, fully-focused settings, such as theaters and classrooms, received significantly lower acceptability ratings than those locations that tend to be either partially or multi-focused. This trend is most apparent in the stark contrasts between theater/classroom and all other locations. The finding is also apparent in that restaurant, which falls somewhere between one collective focus and individual levels of focus, was rated right in the middle – significantly and substantially higher than theater and classroom, but significantly and substantially lower than sidewalks, stores, and buses.

Table 2

*Pairwise Comparisons for Location Scores, all Participants from the Groupings (*n *= 271)*

Comparison	M1 (SD)	M2 (SD)	Mean Diff.	t	p	d
Sidewalk * grocery store	3.83 (1.11)	3.68 (1.00)	.14	2.64	.009	-
Sidewalk * bus	3.83 (1.11)	3.29 (1.13)	.54	7.79	.000**	.47
Sidewalk * restaurant	3.83 (1.11)	2.57 (1.19)	1.26	13.68	.000**	.83
Sidewalk * classroom	3.83 (1.11)	1.77 (1.21)	2.06	17.96	.000**	1.09
Sidewalk * movie theater	3.83 (1.11)	1.55 (1.12)	2.28	19.91	.000**	1.21
Grocery store * bus	3.69 (1.00)	3.30 (1.12)	.39	7.13	.000**	.43
Grocery store * restaurant	3.69 (1.00)	2.57 (1.19)	1.11	13.55	.000**	.82
Grocery store * classroom	3.69 (1.00)	1.77 (1.21)	1.91	17.90	.000**	1.09
Grocery store * theater	3.69 (1.00)	1.55 (1.12)	2.14	20.02	.000**	1.22
Bus * restaurant	3.30 (1.12)	2.57 (1.19)	.72	9.26	.000**	.56
Bus * classroom	3.30 (1.12)	1.77 (1.21)	1.53	14.47	.000**	.88
Bus * movie theater	3.30 (1.12)	1.55 (1.12)	1.75	17.22	.000**	1.05
Restaurant * classroom	2.57 (1.19)	1.77 (1.21)	.80	9.32	.000**	.57
Restaurant * movie theater	2.57 (1.19)	1.55 (1.12)	1.03	12.36	.000**	.75
Classroom * movie theater	1.77 (1.21)	1.55 (1.12)	.22	4.91	.000**	.30

Note. M1 (SD) = Mean and standard deviation for the first variable in the comparison.

M2 (SD) = Mean and standard deviation for the second variable in the comparison.

* $p < .003$. ** $p < .001$. $df = 269$.

Findings for the Research Question

To address the research question exploring cultural differences, a one-way multivariate analysis of variance (MANOVA) was conducted to determine the effects of cultural background on perceptions of mobile phone use in the select settings. The independent variable was culture with five levels (U.S. Mainland, Hawaii, Japan, Taiwan, Sweden), and the dependent variables were assessments of mobile phone use in the six public settings (theater, restaurant, bus, store, classroom, sidewalk). Results indicated significant differences among the cultural groupings on the dependent measures, Wilks' Λ = .70, $F (24, 905) = 4.00$, $p < .001$, multivariate partial η^2 = .08.

Following up on the significant MANOVA, ANOVA tests were conducted exploring the cultural differences for assessments of each of the six public settings. A Bonferroni procedure was used to protect against Type 1 error, so each ANOVA was tested at the .05 divided by 6 or .008 level. The ANOVAs revealed statistically significant differences among the cultural groupings for perceptions of mobile phone use in a movie theater, restaurant, bus, and classroom, and assessments of use on a sidewalk approached significance with $p < .01$. Statistically significant differences were not found for use in a grocery store. The ANOVA results are reported in Table 3.

Table 3

Analysis of Variance Results for Acceptability Ratings among Cultural Groupings

Locations	df	F	η^2	p
Movie theater	4	5.26	.07	.00**
Classroom	4	6.96	1.00	.00**
Restaurant	4	6.24	.09	.00**
Bus	4	5.59	.08	.00**
Grocery store	4	.46	--	.76
Sidewalk	4	3.16	.05	.01

Notes. Independent variable is cultural grouping with five levels: U.S. Mainland (n = 101), Hawaii *(n =*
57), Japan *(n* = 39), Taiwan *(n* = 38), Sweden *(n* = 36).
* p < .008, ** p < .001.

       To further determine how the groups differed, post hoc analyses were performed for the four significant ANOVAs as well as the ANOVA that approached significance. Post hocs involved pairwise comparisons among the cultural groupings using Tukey's Honestly Significant Difference (HSD) tests. Table 4 reveals several cross-cultural similarities and differences in perceptions of mobile phone use in the various public settings. Differences include higher scores from Taiwanese participants for talking on a mobile phone in a movie theater and in a restaurant than those reported by U.S. Mainlanders, Hawaiians, and Swedes. Taiwanese participants also reported significantly more tolerance for mobile phone use in a classroom than did individuals from the U.S. Mainland and Sweden. As expected, participants from Japan reported significantly less tolerance for talking on a mobile phone on a bus than did participants from all other cultures. In addition, Japanese participants were significantly less tolerant of mobile phone use on a sidewalk than were U.S. Mainlanders and Swedes, but significantly more tolerant of use in a classroom than were individuals from those two cultural groups. Descriptive statistics for all of the scores are provided in Table 1 prior.

Table 4

Post Hoc Cross-Cultural Comparisons of Location Scores (N = 271)

| Comparison | Mean Differences for Score of Social Acceptability | | | | |
	Theater	Restaurant	Bus	Classroom	Sidewalk
Taiwan – Japan	.45	.68	.84**	.13	.42
Taiwan – U.S. Mainland	.85**	1.03**	-.07	.91**	-.24
Taiwan – Hawaii	.73**	.72*	-.01	.61	.03
Taiwan – Sweden	.93**	1.06**	-.13	1.01**	-.32
Japan – U.S. Mainland	.41	.34	-.91**	.78**	-.66**
Japan – Hawaii	.28	.03	-.85**	.48	-.39
Japan – Sweden	.49	.38	-.97**	.87**	-.74*
U.S. Mainland – Hawaii	-.13	-.31	.06	-.30	.27
U.S. Mainland – Sweden	.08	.04	-.06	.10	-.08
Hawaii – Sweden	.20	.35	-.12	.40	-.35

Notes. U.S. Mainland *n* = 101, Hawaii *n* = 57, Japan *n* = 39, Taiwan *n* = 38, Sweden *n* = 36.

A positive mean difference reflects a higher social acceptability score for the first culture listed in the comparison.

* *p* < .05. ** *p* < .01.

Discussion

Summary of the Findings

This investigation examined perceptions of mobile phone use in select public settings (theater, restaurant, bus, store, classroom, sidewalk) among individuals from five distinct cultural groupings (U.S. Mainland, Hawaii, Japan, Taiwan, Sweden). Drawing from theoretical principles of Erving Goffman, the study first hypothesized that more fully-focused settings (i.e., those involving more collective levels of involvement) would be regarded as less acceptable locations for talking on a mobile phone than settings that support more individualized levels of focus. Supporting the hypothesis, results showed that participants, when examined overall, rated the fully-focused settings of movie theater and classroom significantly and substantially lower than all other settings, with acceptability means of 1.55/5.00 and 1.77 respectively. Furthermore, the multi-focused settings of bus, store, and sidewalk all received means of 3.30, 3.69, and 3.83 respectively, which are significantly and substantially higher than the mean for the setting of restaurant (*M* = 2.57), which lies somewhere between the two extremes for focus. In short, the results reveal a discernable pattern that is consistent with the hypotheses. Multi-focused settings (bus, store, sidewalk) received average acceptability ratings well above three on a five point scale, while restaurant averaged a score in the mid-two range, and the fully-focused settings (theater, classroom) were rated much lower in the one range. All comparisons across these three categories were statistically significant, and the effects were sizeable (see Table 2).

Drawing from the perspectives of Social Construction of Technology (SCOT) and Apparatgeist, the study then explored a research question probing for cultural differences in these perceptions. Findings for the research question point to distinctive cultural trends. Taiwanese participants tended to report more tolerance for mobile phone use in a theater, restaurant, and classroom than did participants from the other cultural groupings. Japanese participants also tended to be more tolerant of mobile phone use in a classroom, but less tolerant of use on a sidewalk and, especially, on a bus than were the other participants.

Interpretation of the Findings

Findings for the hypothesis. On the surface, the findings for the hypothesis appear to empirically support the use of Goffman's notion of focus as a guideline for normative mobile phone use in public. In other words, 'when there is no single event to focus on collectively, distractions such as a mobile phone call can be less taxing on the experience of the audience and the constitution of the social stage' (Campbell, 2006: 289). However, it is important to acknowledge that tests for the hypothesis involved perceptions of the sample considered as a whole, while findings for the research question revealed significant differences between sub-sets of the sample. These sub-sample differences may challenge the extent to which the overall perceptions are meaningful. One way to address this concern is to compare the orders in which the cultural groupings rated the locations. Even if some of the individual scores for the locations differ cross-culturally, coherent patterns in that order of the ratings would provide firmer ground for interpreting the perceptions of the entire sample as meaningful. Closer examination of the ratings reveals that there are indeed consistent cross-cultural patterns in the order of the ratings. With the exception of the Japanese sub-sample, the mean scores for each cultural grouping resulted in the exact same order. From least to most acceptable, the order is: (1) theater, (2) classroom, (3) restaurant, (4) bus, (5) store, (6) sidewalk. The order for the ratings within the Japanese sub-set differed in two ways. First, Japanese participants rated mobile phone use on a bus much lower than did the other participants. While bus rated between 3.30 and 3.50 for the other groupings, Japanese participants rated this location 2.53, which caused it to be slightly lower than mobile phone use in a restaurant ($M = 2.66$) for this group. This lower score for mobile phone use on a bus is not surprising, considering voice calling is restricted on Japanese public transportation (Okabe and Ito, 2005). In addition, the Japanese participants differed in that they rated mobile phone use on a public sidewalk ($M = 3.34$) lower than use in a grocery store ($M = 3.55$). The lower score for sidewalk is noteworthy, especially in light of the fact that the other cultural groupings rated this setting substantially higher with scores between 3.73 and 4.08. While these observations within the Japanese sub-set are important, so too are the numerous cross-cultural consistencies, which lend support for Apparatgeist, which posits there are shared elements in how individuals conceptualize and use the mobile phone.

While Goffman's level of engagement appears to be a common and influential ingredient in the emerging mobile communication etiquette, it is important to qualify that it is only part of a complex story that likely has no definitive ending. To be sure, numerous other contextual factors play into normative mobile phone use. For example, Ling (2004) pointed out the importance of a setting's architecture. Some locations, such as restaurants, are simultaneously public and private in nature. They offer shared space, but also architectural features such as booths that allow people to erect 'symbolic fences' to support

private appropriation of the public space. Ling also noted that background noise can help mitigate mobile phone intrusions. Indeed, some public places such as restaurants and stores provide their own background noise, making chatter both common and acceptable. In addition to aspects of the physical environment, the experience of being in a particular setting can also play an important role in normative mobile phone use. For example,

> The experience of being in the classroom is much more influential on the ultimate purpose than is the case with settings such as public transportation or the grocery store. Learning is heavily mediated through the experience of being in the classroom. If that experience is interrupted by a mobile phone distraction, there is more at stake than is the case with grocery shopping or commuting on public transportation (Campbell, 2006: 290).

Finally, forms of mobile phone use and other user behaviors can also influence perceptions of social acceptability. Speaking quietly, keeping a call brief, and turning away from others have been found to be effective ways of reducing the intrusiveness of a mobile phone call around others (Campbell, 2004). Future research on mobile phone use in public should account not only for the focus of the occasion, but for characteristics of the physical surroundings, significance of the experience, and behaviors of the mobile phone user as well. It would be especially fruitful to explore how these elements interact with one another and the resulting effects on perceptions of co-present others.

Findings for the research question. Turning now to the research question, the results reveal an interesting mixture of similarities and nuances among the groupings. Before discussing the cross-cultural patterns in detail, it is important to keep in mind the convenient nature of the sample. Generalization of the findings would require a representative sample, therefore the so-called 'cross-cultural' trends in this discussion pertain only to these particular groups[2].

As discussed above, one cross-cultural consistency can be seen in the order in which participants rated mobile phone use in the various settings. Participants consistently rated theater as the least acceptable setting, followed respectively by classroom, restaurant, bus, store, and sidewalk. Differences in assessments of these settings were statistically significant, indicating that this order is meaningful. The

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[2] The author would like to acknowledge some important limitations. First, the term 'culture' is used only loosely in this study. Culture is a robust concept that involves shared language, values, customs, and models for perceiving and interpreting. For the purposes of this study, culture was operationalized by asking participants which country they were from, and in the case of the U.S., if they were from the Mainland or the remote island-state of Hawaii. This approach provides only one indication of culture and does not fully capture the complexities of this concept. In addition, cautions about the sampling bear repeating. Although the sample is large enough to yield statistical significance where differences exist, it is convenient in nature, and therefore the findings must be regarded as illustrative in nature. Future studies should strive for randomized sampling techniques with sufficient sizes to allow for more generalizable results.

only variation to the order is within the Japanese sub-set, which was to be expected (see Okabe & Ito, 2005). So we see here a coherent cross-cultural pattern, but also a nuance within the Japanese sub-set.

A closer look at the results reveals other cultural nuances within this overall trend. In particular, the findings show a clustering pattern among some of the groups. Responses of participants from the U.S. Mainland and Sweden tended to cluster together, as did responses of participants from Japan and Taiwan. One way to view this pattern is to notice there are no significant differences between the U.S. Mainland and Swedish groups, and almost no differences between the Japanese and Taiwanese groups. In other words, the significant differences are between these two pairs and not within them. This pattern can also be seen in the descriptive statistics and pairwise tests. In every single comparison, Japanese and Taiwanese participants reported more tolerance for mobile phone use in a theater, classroom, and restaurant than did those from the U.S. Mainland and Sweden. Many, although not all, of these comparisons are statistically significant. Setting significance aside, the fact that the mean scores reflect no deviation in this trend further indicates it might be meaningful. Furthermore, in almost all cases participants from the two 'Western' societies reported more tolerant attitudes about mobile phone use on a public sidewalk and in a grocery store. These regional tendencies resonate with other regional patterns observed by Castells, Fernandez-Ardevol, Qiu, and Sey (2007). Future research is warranted to better understand cultural particularities for normative mobile phone use in public.

In addition to laying the groundwork for future research, this study also lays the groundwork for furthering the theoretical dialogue. The cultural particularities and similarities reported in this study support both the SCOT and Apparatgeist theoretical orientations. Through the lens of SCOT, mobile communication norms are constructed at various levels of social order, from the tightly-knit personal communication network (see Campbell & Russo, 2003) to larger-scale cultural networks (see Okabe & Ito, 2005). The differences found in this study can be understood as socially constructed nuances. Apparatgeist, on the other hand, suggests there is something universal about how people conceptualize and use PCT, that 'something' being the logic of perpetual contact. From this perspective, the discernable trends and cultural similarities reported in this study are reflective of Apparatgeist and the universal human inclination toward perpetual contact. The core principles of each perspective seem to suggest theoretical tension between SCOT and Apparatgeist – one highlighting contextual nuance, the other universality. Ito acknowledged this tension when she argued, 'By contrast [of Apparatgeist], our approach is that technological universality, rather than being a structural given, is a contingent production of a wide range of actors, including governments, technologies, and scholars' (2005: 7).

The findings from this study provide an empirical platform for discussion aimed at reconciling this apparent tension between SCOT and Apparatgeist. Certainly technologies (their meanings, their uses, and the artifacts themselves) are socially constructed and reconstructed in context. In the case of mobile telephony, there is compelling evidence that this happens at both the micro (Campbell and Russo, 2003) and macro (Okabe and Ito, 2005) levels. That is, people socially negotiate what a particular technology is, what it means, and how/whether it should be used in small communication networks as well larger-scale social landscapes. In their explication of Apparatgeist, Katz and Aakhus agreed with this position by stating, 'Indeed, technology is the result of chains of cooperative human activity and is socially

constructed in people's actions' (2002: 305). What I propose here is that one can accept the principles of SCOT without necessarily rejecting universalities associated with Apparatgeist and human communication.

Indeed, communication itself *is* a universal quality of human life. Since communication is universal in nature[3], it is reasonable to embrace the notion that humans have certain shared orientations toward it that are reflected in the ways we think about and use communication technologies. This seems to be what Katz and Aakhus were getting at with Apparatgeist. That is, the authors argued that the universal quality of Apparatgeist lies in the realm of the social rather than that of the technological. According to Katz and Aakhus, 'Perpetual contact is a socio-logic … located in the "socially developed sense of practical reasoning" that results from people "thinking and acting together over time"' (2002: 307). Therefore, the strength of Apparatgeist is not in explaining or predicting specific changes that come out of PCT use, but rather in highlighting the areas of social life in which those changes appear. Katz and Aakhus explained, 'We perceive consistencies in what we might call the *strain of the direction* of change' (2002: 303, italics added). To put this statement in the context of the present study, Apparatgeist is a useful framework for identifying normative behavior in public settings as one of the *strains in the direction* of change resulting from mobile communication, while SCOT is useful framing for examining the changes that take place within a particular context. In this sense, SCOT and Apparatgeist can be regarded and used as complementary rather than competing theoretical perspectives.

Concluding Remarks

This study underscores the fact that mobile communication is simultaneously a global and local phenomenon. The globalizing aspect can most obviously be seen in the technology's worldwide penetration. Certainly, the adoption of mobile telephony has not occurred uniformly in all parts of the world. However, this is not to suggest that mobile telephony's reach is not global in nature. While the per capita rate of diffusion is higher in wealthier countries, there is an extraordinary rate of growth in many of the developing regions. In fact, there are actually more handsets in the developing world than in the developed. Although it may sound bold, this statement is believable if one considers China and India as developing countries. Penetration rates are also rising in the African region, which has the highest mobile rate of growth (International Telecommunication Union, 2007).

Just as the diffusion of mobile telephony is global, so are the social implications. The dissemination of mobile communication technology is part of a larger socio-techno transition toward a network society, characterized by flexible, decentralized, network nodes. Information and communication technologies play an important role by nourishing this fundamental shift in social order, which is a cross-cultural phenomenon (Castells, 2000; Castells, 2004). Because it is such a personal technology, mobile telephony occupies a distinct place in the network society with distinct social consequences, including new ways of personalizing public space (Campbell & Park, in press). Castells et al. (2007) explained that mobile communication alters how people conceptualize and use space as it is transformed from a 'space of

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[3] The suggestion here is not that all communication is the same for all situations and all people, but rather that it is universally practiced.

place' to a 'space of flow.' In other words, places take on new meaning as they are utilized for their ability to support networked flows of interaction. Mobile communication extends the space of flows by affording greater flexibility in when and where individuals connect as network nodes. In a sense, mobile communication also has a homogenizing effect on the meaning of space in different parts of the world. As Castells et al. explained, 'wireless communication homogenizes space: being ubiquitous means redefining space into the space of communication' (2007: 178). The cross-cultural consistencies reported in this study illustrate the global reach of the normative implications of the space of flows.

At the same time, mobile telephony is also a distinctively local technology. In a survey of adults in the U.S., Campbell and Kwak (2007) found that a vast majority of mobile contact is made among individuals who are proximally local. Many of these local exchanges are for the coordination of everyday life activities. Ling and Yttri (1999, 2002; Ling, 2004) identified 'micro-coordination' as a primary use of the mobile phone, which entails use of the technology for handling basic logistics, softening schedules, and progressive refinement of an activity, such as filling in details of open-ended plans. This nuanced form of coordination is particularly helpful within the family. Family members are better able to identify, relay, and manage household errands, and parents have come to rely on mobile communication to keep tabs on and coordinate activities with their children. This local dimension of mobile telephony can be seen in its relational uses as well, especially among young people. Young people are known for their incessant use of mobile telephony to maintain a sense of 'perpetual contact' (Katz & Aakhus, 2002). While these communication patterns might raise concerns that mobile technology is replacing traditional forms of socializing, in actuality many of those who live in close proximity tend to use it to supplement rather than supplant face-to-face interaction (Habuchi, 2005; Ishii, 2006).

This global/local duality of mobile communication is reflected in the findings from this study. The patterns of consistency across the sample show how the re-conceptualization of space crosses cultural boundaries as individuals from different geographic areas face the same challenge of negotiating new norms. In this sense, mobile communication leaves discernable footprints all over the world that bear striking resemblances. Yet, because mobile communication is such a local practice, norms surrounding its use are also influenced by local and (by way of extension) cultural context as well. The findings from this study help shed light on both the shared and unique normative features of mobile telephony's footprint throughout society.

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