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From Moving About the City to Moving About the Home: Considering Bounded Spaces of Connected Mobility

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Findings from this survey of China and the United States support the proposition that bounded connected mobility, or use of mobile media while moving within locations, can be distinctively meaningful for how and why people use the technology. Among the results, we found that in China, connected mobility at home was associated with use of the technology for coordination, while between locations was associated with news. In the United States, connected mobility at home was associated with the use of the technology for passing time, and between locations was associated with personal relationships. The discussion interprets these and other findings in light of the COVID-19 pandemic and different lockdown conditions in China and the United States, as well as implications for scholarship on placemaking, mobilities, and mobile media and communication.

Keywords: COVID-19 pandemic, lockdown, mobile communication, mobile media, mobile phone, mobility, placemaking, smartphone, uses and gratifications

Mobile media have enabled people to connect with others, information, and content while moving about. Scholarship has examined how this *connected mobility* influences and how people relate to their social and spatial environments. However, this work focuses on the ramifications of using media while moving between places. This study extends it by examining the ramifications of using media while moving within places, which we term *bounded connected mobility*. In this study, we propose that bounded connected

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mobility, like connected mobility writ large, shapes how people relate to their social and spatial environments. Bounded settings, especially common ones, present constraints and opportunities that can have distinctive implications for connection needs and desires during the flow of movement. Therefore, this study compares how unbounded and bounded connected mobilities relate differently to key uses of mobile media. We specifically examine bounded connected mobility within the home, which is likely the most common site where people move about while using the technology (e.g., talking on the phone on the way to the kitchen).

Using a cross-national survey, this study investigates the proposition that connected mobility at home can support mobile media usage in ways that differ from appropriation while going about "between locations," as a highly common case of unbounded connected mobility. Drawing from previous scholarship, we include news, coordination, relationships, and passing time as mobile media uses and gratification (U&G), while examining their relationships with connected mobility levels at home and between locations, which were especially impacted in the early months of the COVID-19 pandemic when the survey was fielded. Still, these cases offer only a preliminary view of bounded connected mobility conditions and their implications, and the discussion section provides guidance for developing research in this area. Because the COVID-19 pandemic heightened the salience of the domestic environment, we also report how varying degrees of staying home moderate relationships. In addition, the study includes a cross-national comparison that utilizes a large survey of adults living in China and the United States. As discussed below, lockdown conditions were much harsher in China but still meaningful in the United States, which we leverage for interpreting the findings. These and other distinctions provide traction for seeing how patterns might emerge within and across different landscapes.

Bounded Connected Mobility and Existing Literatures

In arguing for bounded connected mobility, we point to literatures across multiple fields that illuminate the needs and opportunities for conceptual and empirical growth in this direction. As further addressed in the discussion, bounded connected mobility offers a new vantage that can enrich and extend multiple literatures. Those reviewed here reveal a clear scholarly emphasis on connected mobility between and beyond locations. Uses and implications of the technology within the place are also studied, but in ways that overlook mobility as important. The following sections show that these trends run across overlapping but distinct subfields, including placemaking, mobility studies, and mobile media and communication.

Placemaking Scholarship

One notable stream of research flows from the theoretical stance that places are socially constructed through meaning, movement, and interaction (Wilken, 2005). A growing number of scholars recognize how mobile media have become important to how people interface and navigate the placemaking process (e.g., Hjorth & Pink, 2014; Özkul, 2017; Wilken & Goggin, 2012). From this perspective, space becomes place through movement and media use, as they interact to make locations meaningful (de Souza e Silva, 2006; Wilken, 2005). Rather than liberating (Wellman, 2001) or otherwise separating people from the physical environment (Meyrowitz, 1986), media use during movement blurs distinctions between the digital and the physical, creating a new type of hybrid space (de Souza e Silva, 2006).

Thus far, placemaking through mobile media has largely been examined in urban and public settings, evident in the subliteratures on mobile gaming, mobile social media, and digital wayfaring (Campbell, 2019). In research on mobile gaming, cities are regarded as gameboards that support mobility during play (de Souza e Silva, 2006; Hjorth, 2011). Research on locative social media (Humphreys & Liao, 2011, 2013) and digital wayfaring with camera phone apps (Hjorth & Pink, 2014; Ling & Li, 2020) reflect a similar focus on urban movements and social uses of public places. These lines of research demonstrate how location-based practices, such as "checking in" and "snapping," connect mobile people to public places and make them more personally and socially meaningful while going about cities (see also de Souza e Silva & Frith, 2012; Farman, 2012; Gordon & de Souza e Silva, 2011; Richardson & Wilken, 2009). The present study aligns with the placemaking perspective, while pushing for greater consideration of how it happens within locations. Places are more than mere locations; they are locations plus everything that makes them meaningful (Wilken, 2005), including connected movements within them.

Mobility Studies

A similar trend can be seen in mobility studies, which reflects a broader paradigmatic shift toward a focus on movement, particularly the cultural and power dynamics that underlie the movement of people, things, ideas, and innovations (Cresswell, 2006; Urry, 2000, 2007). Mobility studies emerged from questions about globalization, and much of its development has occurred through scholarship on global-local tensions as they play out in urban communities (Sheller, 2014). As Cresswell (2021) explains, "much of the early work responded to a theoretical devaluing of mobility where mobility itself was either ignored, taken-for-granted, or negatively valued" (p. 52). Yet the home is still commonly treated as a mooring people travel to and from (Frost & Selwyn, 2018), and during the COVID-19 pandemic themes of being "stuck" at home prevailed (Pase, Presti, Rosetto, & Peterle, 2021; Zuez & Hannam, 2021). Under these conditions, mobility scholars recognize the home as a site of existential immobility, where freedom of physical movement is restricted and media is used to reach beyond geographic constraints (Hage, 2009; Salazar, 2021). Zuev and Hannam (2021) applied the related concept of "anxious immobilities" in their discussion of being stuck during the pandemic, including at home. Studying connected mobility within the home and other moorings can help mobilities scholarship move into fresh territory that is aligned with its foundational aim of revealing meanings in taken-for-granted mobilities.

Complicating matters are the technical constraints of measuring mobility in bounded spaces. Quantitative approaches to mobility studies have been particularly challenged by the limitations of geospatial methods. GPS data can distinguish different places but cannot reliably detect the midnight wander to the cookie jar. In fact, GPS data generated in-place are quite messy, albeit clustered around the true location in aggregate (Müller et al., 2022). Scholars often try to reduce this variability, and in the process, mobility as we know it is treated as noise. Mobile call-data records, another prominent source of data, reveal geospatial patterns of mobile telephony (e.g., Andris, Godfrey, Maitland, & McGee, 2019). Yet, users remain locked in the cells where calls originated. Technologies for capturing fine-grained movement, such as accelerometers, remain technically challenging to implement, rendering mobility *within* places inaccessible and understudied.

Mobile Media and Communication

Mobile communication scholarship has a tradition of investigating mobile phone use in specific locations. For instance, research has compared how frequently people use mobile phones at home versus in the workplace (Hintze, Hintze, Findling, & Mayrhofer, 2017; Soikkeli, Karikoski, & Hammainen, 2011; Verkasalo, 2009); however, mobility during use lies beyond the scope, other than interest in frequency while commuting (Karnowski & Jandura, 2014). Scholarly interest in mobile media and the home goes far beyond the frequency of use. It also engages deeply with the rules, roles, power dynamics, and relationships surrounding communication technology and the home, especially in cases of families with children and adolescents (Chambers, 2016; Lim, 2020). Those studies recognize the home as a site of connectivity, but not in ways that account for physical mobility as we do here. Scholars have also taken an interest in mobile news consumption at home and how it fits into the larger news media landscape, but again, user mobility is not a factor (Struckmann & Karnowski, 2016; Van Damme, Courtois, Verbrugge, & de Marez, 2015). Nor is it much of a factor in research on social norms for voice calls and texting in public settings, such as restaurants, cafes, and public transportation (Humphreys, 2005; Humphreys & Hardeman, 2021; Ling, 1997; Okabe & Ito, 2005). As with the research on the home environment, mobility during communication in public settings lies outside of the research interests. One notable exception is Ann Light's (2008) phenomenological account of mobile phone use while moving around a crowded bus. Using observational methods, Light demonstrates how negotiating space in this bounded setting can change communication patterns through, for example, ignoring calls to free up one's hands and attention while moving to a different part of the bus. Light's (2008) study is unique in demonstrating the nuanced dynamics of place and timing that shape how people use mobile media during bounded patterns of movement.

The intellectual draw toward *un*bounded settings of mobility and communication is also evident in the field's conceptual and theoretical contributions. The early concept of "microcoordination" (Ling, 1997; Ling & Yttri, 2002), which has been taken up widely (e.g., Bertel, 2013; Castells et al., 2006; Licoppe, 2004, Ling & Lai, 2016), refers to making social arrangements iteratively rather than planning around time and space. Ling and Yttri (2002) explain microcoordination as the "redirection of trips that have already started … i.e., sitting in a traffic jam and calling ahead," and situations where "in transit [users] might call each other to confirm the timing and the location" (p. 6). As these quotes depict, this concept captures instrumental communication during the flows of travels, trips, and commutes in everyday life. Microcoordination is also recognized as revolutionary in how protesters carry out political demonstrations (Ling, 2012; Rheingold, 2008), but here again, the focus is on communication supporting movements out in the public domain. By including "coordination" among U&G, this study looks at how much it occurs within the home and whether bounded and unbounded connected mobilities might have supported it in different ways.

Another important part of the field's foundation is domestication, a theoretical framework originally well-suited to studying connected mobility at home, yet later revamped so it could serve as a lens for scholarship on mobile media in social life more broadly (Haddon, 2003). Domestication advances a series of stages for studying how information and communication technologies become incorporated into one's personal circumstances and ultimately as part of oneself (Silverstone, Hirsch, & Morley, 1992). As the name suggests, domestication was originally developed to explain how innovations, such as the personal computer, become incorporated into daily living in the home environment. However, the scope of domestication theory has changed

to account for mobile communication, specifically because of its uses and applications outside of the home (Haddon, 2003, 2020). Rather than the home setting, domestication of mobile media is studied in the context of fluidly distributed networks and various places of social activity (e.g., Bertel, 2013; Haddon, 2003, 2020; Ling, 2004; Shekar, 2008). This evolution of domestication theory reflects the broader tendency to privilege settings outside the home when addressing questions about mobility and technology use.

This trend can also be seen in the measurements of mobile media use on the move. Some survey measures have aimed at mobile phone use between locations (Leung & Wei, 2000), and some at connected mobility overall (Fox & McEwan, 2017; Leung & Wei, 2000; Vanden Abeele, Schouten, & Antheunis, 2017). However, measures for mobile media use while moving about bounded settings, such as the home, are difficult to find. In that regard, this study advances methodological and empirical components to widen the conceptual and physical landscapes for research on connected mobility.

The Present Study

The literature above shows that mobility, media use, and space are entangled. Although they tend to overlook mobility in the bounded settings of daily life, the existing literatures highlight the distinctive ways that cities contextualize how people use mobile media while mobile. The present study extends that work by identifying connected mobility in commonly occupied bounded settings—in this case, the home—as presenting a mix of social, psychological, and geographic conditions distinct from those experienced while using mobile media between locations. Considering spatial and temporal differences in how people experience the home as a circumscribed and private area compared to the public nature of moving between locations (see Altman, 1975), it is reasonable to anticipate that these different settings of connected mobility may support and suppress different uses of mobile media.

This study utilizes survey data to ask (RQ1) whether connected mobility at home and between locations will be differentially associated with the following uses: (1) news and information, (2) social coordination, (3) personal relationships, and (4) passing time when bored (RQ1). Although not exhaustive, this list offers a well-grounded mix of uses rooted in the U&G tradition (Katz, Blumer, & Gurevitch, 1973) and research applying it to mobile communication (Campbell & Kwak, 2010, 2011; Leung & Wei, 2000; Wei & Lo, 2006). It also reflects a broader scholarly interest in how people use mobile media for news (Struckmann & Karnowski, 2016; Van Damme et al., 2015), personal relationships (Hall & Baym, 2012; Ling, 2008), and passing time (Schaeffer, 2019), which map on to social, information, and escape themes well-recognized in U&G research (Sundar & Limperos, 2013). We added mobile-mediated coordination considering the above scholarship on "microcoordination" (Ling, 1997; Ling & Yttri, 2002), and Sundar and Limperos' (2013) call for expanding U&G to account for new aspects of the evolving media ecology.

Another research question involves the impact of the COVID-19 pandemic on experiences of being at home. Data were collected in September 2020 during pandemic-related quarantining and social distancing, and the home became even more salient, although to varying degrees. To account for this, we asked whether associations between mobility settings and the U&G of mobile media differ depending on the extent to which people stayed home during the months leading up to the research (RQ2). Although primarily included due to the pandemic, this question may also provide insight into how staying home is a key factor shaping connected mobility at home postpandemic.

Data were collected in China and the United States as part of a larger survey involving those societies. Mobile media has become deeply, but differently, embedded in the social fabric of both (Ling, 2012; Liu, 2020). Compared with the United States, smartphones and super-apps are more central in China (Huang & Miao, 2021; Xiao & Mou, 2019), and personal computers are not as common (China Internet Network Information Center, 2022; Ryan, 2018). In addition, the governments responded differently in the early months of the pandemic. The government in China, where people commonly live in smaller apartments, imposed strict lockdowns and quarantine regulations (Graham-Harrison & Kuo, 2020), whereas responses across the United States were decentralized and more lax (Zhang & Warner, 2020), reaching beyond what our measure for staying home captured. Social values, such as individualism and collectivism (Oyserman, Coon, & Kemmelmeier, 2002; Triandis & Gelfand, 1998), have also been considered to explain mobile media use (e.g., Liu, 2020). Thus, there are reasons to expect that cross-national differences might emerge. The third research question (RQ3) asks how the U&G relate to the connected mobility conditions in ways that are similar/different across the samples. The underlying thinking here is that bounded connected mobility has implications for U&G for both samples but in potentially different ways.

Methods

Participants

Participants (N = 1,025) were recruited from China (n = 518) and the United States (n = 507) via Qualtrics in September 2020. Drawing from opt-in online panels, Qualtrics utilized a stratified quota sampling approach to aim for variations in age, gender, and socioeconomic status representative of each country. During the inspection of the distributions, 40 participants were excluded for taking excessive time, using the same IP address, or not completing critical measures. The final sample in China (n = 485) consisted of 245 females and 240 males aged 40.88 years, on average (SD = 13.55). The final sample in the United States (n = 500) consisted of 250 females, 241 males, 5 transgender individuals, and 4 who did not respond (47.39 years old on average, SD = 18.24).

Procedure

The survey was conducted online with Mandarin and English options. Participants first reported basic demographic information. They were then prompted to reflect on their lives over the last several months when responding to the following measures, in addition to others, for the broader project.

Measures

Descriptive and reliability statistics can be found in Table 1, following the measurement descriptions.

Mobile Media Uses and Gratifications

Measures for mobile media use began with the following prompt: "How often do you use mobile communication technology (e.g., mobile phone, smartphone, smartwatch)…?" Participants responded to

the following items: "for news and information," "to coordinate plans," "to maintain personal relationships," and "to pass time when bored." The use of single items aligns with other work that studies distinct functions of mobile media use (e.g., Wolfers, Kitzmann, Sauer, & Sommer, 2020). Response options were based on Boase and Ling (2013), which asked how often (vs. how much) participants used mobile media for each, from *Never* (1) to *About every five minutes* (9). For each, we averaged mobile media use for the other three functions, as well as four additional functions (for "work or school," "entertainment," "photos or videos," and "social media") as a control variable to account for overall mobile media use ("other mobile use").

Connected Mobility: Bounded at Home, Unbounded Between Locations

Connected mobility was measured in two settings: around the home and between locations. Each was captured with four items, with two referring to the availability of mobile media to others and two referring to using a mobile phone. Examples include "I actively use my mobile phone while I am moving around my home" (bounded) and "I use my mobile phone between the different locations I visit" (unbounded). Participants responded using a five-point scale ranging from *Never* (1) to *Always* (5).

Staying Home

A single item captured the extent to which participants stayed at home during the pandemic: "During the last several months, I have been staying at home more often than normal." Participants responded on a seven-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7).

Table 1. Descriptives and Reliabilities.

	US			**China**		
	Mean	SD	α	*Mean*	SD	α
Mobile Media Use						
News	4.59	2.14		5.72	1.15	
Coordination	3.86	2.18		4.96	1.70	
Relationships	4.85	2.09		5.57	1.44	
Passing Time	5.08	2.42		5.82	1.32	
Connected Mobility-Home	3.03	1.23	.91	3.34	0.86	.86
Connected Mobility between Locations	3.45	1.15	.88	3.73	0.82	.84
Staying Home	5.82	1.52		5.72	1.23	

Analysis

Analyses were conducted using ordinary least squares (OLS) regression, with the two forms of connected mobility as predictor variables. We ran models for each function of mobile media use as a criterion variable, using other mobile uses as a control variable (RQ1). Next, we included staying home as a predictor variable, as well as its interaction term with each of the two settings for connected mobility (RQ2). Finally, we compared the results between the samples from China and the United States (RQ3). All variables were grand-mean-centered and standardized to aid the interpretability of moderation.

Results

Descriptive statistics show that the sample from China reported means of 3.34 and 3.73 (5-point scale) for levels of connected mobility at home and between locations, respectively. In the United States, the means were 3.03 at home and 3.45 between locations. The strong means for connected mobility between locations are in alignment with its prevalence in the literature and are significantly higher than reported levels of connected mobility at home (China: $t(964.11) = 6.63$, $p < .001$; United States: $t(993.93) = 5.52$, $p < .001$). Yet, connected mobility at home is above the scale midpoint in both samples, indicating that, despite its absence in the literature, participants reported being engaged in connected mobility more often than "sometimes" in their domestic environment. In addition, participants from China reported greater connected mobility at home, $t(981.99) = 54.13$, $p < .001$, and between locations, $t(974.14) = 62.19$, $p < .001$, than those in the United States, reflecting greater overall reliance on mobile media, at least while moving about.

Next are the findings for RQ1, which asked whether connected mobility at home and between locations are differentially associated with mobile media use for news (Table 2), coordination (Table 3), relationships (Table 4), and passing time (Table 5; RQ1). These models also included the moderating effects of increased staying home during the pandemic (RQ2).

News

Model 1 specified connected mobility at home and between locations as predictors of mobile media use for news. In China, connected mobility between locations was positively associated with use for news, $\beta = 0.12$, $p = .009$. In the United States, neither connected mobility at home nor between locations was associated with mobile use for news. Model 2 added staying home and its interactions with the two settings of connected mobility. In China, the interaction term between connected mobility at home and staying home was negative, $\beta = -0.09$, $p = .033$. For people who stayed at home more often than usual (+1 SD), the relationship between connected mobility at home and use for news was numerically negative, $p = .23$; for people who stayed at home less often than usual (-1 SD), the relationship between connected mobility at home and mobile media use for news was numerically positive, $p = .10$. In the United States, neither interaction term was significant.

Table 2. News.

	Model 1				Model 2			
	US		China		US		China	
	β	*t*	β	*t*	β	*t*	β	*t*
Connected Mobility-Home	.05	0.96	.01	0.21	.06	1.07	.01	0.26
Connected Mobility between Locations	.07	1.32	.12**	2.62	.05	1.06	.12**	2.67
Staying Home					.10**	2.88	−.02	−0.65
Staying Home * Connected Mobility-Home					−.01	−0.17	−.09*	−2.14
Staying Home * Connected Mobility Between Locations					.01	0.17	.01	0.26

Note. *p < .05, **p < .01.

Coordination

Model 3 specified connected mobility at home and between locations as predictors of mobile media use to coordinate plans. In China, connected mobility at home was positively associated with the use of mobile media to coordinate plans, β = 0.20, p < .001, while connected mobility between locations was negatively associated with mobile media use to coordinate plans, β = −0.13, p = .004. In the United States, neither setting of connected mobility was associated with mobile media use to coordinate plans. Model 4 added staying home and its interactions with the mobility setting. In China, the interaction term between connected mobility at home and staying home was negative, β = −0.09, p = .029. For people who stayed at home more often than usual (+1 SD), the relationship between connected mobility at home and use to coordinate plans was marginally positive, p = .09; for people who stayed at home less often than usual (−1 SD), the relationship was negative, p < .01. In the United States, neither interaction term was significant.

Table 3. Coordination.

	Model 1				Model 2			
	US		China		US		China	
	β	*t*	β	*t*	β	*t*	β	*t*
Connected Mobility-Home	−.03	−0.48	.20***	4.35	−.03	−0.62	.20***	4.28
Connected Mobility between Locations	.00	0.08	−.13**	−2.89	.01	0.16	−.12**	−2.65
Staying Home					.05	1.54	-.04	−1.17
Staying Home * Connected Mobility-Home					.07	1.24	-.09*	−2.18
Staying Home * Connected Mobility between Locations					-.06	−1.17	.07	1.58

Note. *p < .05, **p < .01, ***p < .001.

Personal Relationships

Model 5 specified connected mobility at home and between locations as predictors of mobile media use to maintain personal relationships. In China, neither setting of connected mobility was associated with mobile media use to maintain personal relationships. For the U.S. sample, mobile media use while moving about locations was positively associated with the use of technology to maintain personal relationships, β = 0.10, p = .037. Model 6 added staying home and its interactions with the mobility setting. In both countries, neither interaction term was significant.

Table 4. Personal Relationships.

	Model 5				**Model 6**			
	US		**China**		**US**		**China**	
	β	*t*	β	*t*	β	*t*	β	*t*
Connected Mobility-Home	.01	0.25	-.01	−0.12	.01	0.17	.00	0.00
Connected Mobility Between Locations	.10*	2.09	-.01	−0.16	.11*	2.17	-.01	−0.15
Staying Home					-.05	−1.43	-.04	−1.21
Staying Home * Connected Mobility-Home					.01	0.16	-.01	−0.12
Staying Home * Connected Mobility between Locations					.00	0.01	-.01	−0.32

Note. *p < .05, **p < .01.

Passing Time

Model 7 specified connected mobility at home and between locations as predictors of mobile media use to pass time when bored. In China, neither setting for connected mobility was associated with mobile media use to pass time. In the United States, connected mobility at home was positively associated with use to pass time, β = 0.20, p < .001. Model 8 added staying home and its interactions with connected mobility settings. In China, the interaction between connected mobility at home and staying home was positive, β = 0.14, p = .003. For people who stayed at home more often than usual (+1 SD), the relationship between connected mobility at home and use to pass time was positive, p < .01; for people who stayed at home less often than usual (−1 SD), the relationship between connected mobility at home and mobile media use to pass time was numerically negative, p = .29. Further, the interaction term between connected mobility between locations and staying home was negative, β = −0.13, p = .007. For people who stayed at home more often than usual (+1 SD), the relationship between connected mobility between locations and mobile media use to pass time was marginally negative, p = .05; for those who stayed at home less often than usual (−1 SD), the relationship was marginally positive, p = .06. In the United States, neither interaction term was significant.

Table 5. Passing Time.

	Model 7				Model 8			
	US		China		US		China	
	β	*t*	*β*	*t*	β	*t*	*β*	*t*
Connected Mobility-Home	.20***	4.35	.05	0.96	.21***	4.43	.06	1.26
Connected Mobility between Locations	.04	1.00	.00	0.09	.04	0.87	-.01	−0.21
Staying Home					-.01	−0.20	-.05	−1.19
Staying Home * Connected Mobility-Home					-.06	−1.37	.14**	2.98
Staying Home * Connected Mobility between Locations					.02	0.42	-.13**	−2.73

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Summary

Addressing RQ1, using mobile media while moving about home was positively associated with its use to coordinate plans in China and to pass time while bored in the United States. In China, mobile media use between locations was negatively associated with coordination and positively associated with news consumption. In the United States, connected mobility between locations was positively associated with maintaining personal relationships.

Moving on to RQ2, the relationships between mobility setting and mobile media use differed when accounting for reported levels of staying home during the early months of COVID-19 but only for the sample from China. The relationship between connected mobility at home and news consumption was positive for those staying home less than usual and negative for those staying home more than usual. The positive relationship between connected mobility at home and coordination was stronger for those staying home less than usual. The relationship between connected mobility at home and passing time was positive for those staying home more than usual and leaned negative for those staying home less than usual. The relationship between connected mobility between locations and passing time was marginally positive for those staying home less than usual and marginally negative for those staying home more than usual.

These results provide clear evidence for RQ3. There were differences between China and the United States in the roles of connected mobility at home and between locations. Furthermore, these relationships were only moderated by staying home in China. The discussion offers possible interpretations for the cross-national differences along with contributions of the overall findings.

Discussion

The findings from this study support the proposition that bounded connected mobility can be distinctively meaningful for how and why people use mobile media. Within both samples, there are

differences in how certain U&G relate to connected mobility at home vs. between locations. Similarly, there are notable differences across the samples. The results suggest that the two mobility conditions can differentially support certain uses and that these dynamics are sensitive to broader social/societal circumstances. Beyond raising questions about cross-national differences, the findings from this study help establish bounded connected mobility as a meaningful experience in everyday life that can support, and likely suppress, mobile media use in distinctive ways. Although not all results are significant, the findings align with this proposition, helping to steer scholarship to recognizing boundedness as a salient condition that shapes how and why people use mobile media as they move about. The discussion identifies patterns and plausible explanations for the findings, along with implications and next steps for research.

We start by observing an overarching pattern, with instrumental needs being met through connected mobility in China and personal gratifications in the United States. In China, connected mobility at home was associated with use of the technology for coordination (planning and arrangements), while between locations was associated with news and information. A softer set of gratifications was supported in the United States, where connected mobility at home was associated with use of the technology for passing time, and between locations was associated with personal relationships. Together, the findings suggest that needs of a more instrumental nature (tasks, information) are being met in China and gratifications of a more personal nature (stimulation, socializing) in the United States.

This pattern may reflect differences in existential immobility, which people experienced worldwide during the pandemic but in different ways. Existential immobility refers to the sense of being stuck in place, which can stem from social, cultural, economic, and political constraints (Hage, 2009). Existential immobility can especially be acute during government-managed crises, such as the COVID-19 pandemic (Salazar, 2021), while media offer a sense of imagined mobility or the ability to reach out and connect beyond physical constraints (Hage, 2009; Wallis, 2013). From this perspective, the positive relationship between passing time and bounded connected mobility in the United States may reflect the desire to escape boredom from being stuck at home. Rather than escaping boredom, the association between bounded connected mobility and coordination in China may reflect the need to plan for what is happening outside of the home. The strict and dynamic lockdown conditions likely called for planning and coordination from the home environment and the need to stay informed about the public environment while going about it. Restrictions and punishments in the United States are not considered as "brutal" (Graham-Harrison & Kuo, 2020) and "draconian" (Adey, Hannam, Sheller, & Tyfield, 2021) as those in China, which may have generated less of a need for planning and news, making space for more personal gratifications to be met, like passing time and staying in touch with friends. The patterns for bounded connected mobility may be evidence that participants in the United States were faced with boredom while moving about home, whereas those in China were faced with hardships that called for planning and coordination. They also shed light on the politics of bounded connected mobility, illustrating how mobility and communication are shaped by political societal structures (Massey, 2004).

This interpretation aligns with the interaction effect for staying home in China, with the positive relationship between connected mobility at home and coordination being stronger for those staying home less than usual. This finding suggests that mobile-mediated coordination was supported when moving around the home, particularly among those who ventured out most frequently. The findings for news consumption are also aligned. In China, connected mobility between locations was positively associated with

mobile news consumption, and those who stayed at home less than usual displayed a stronger association between connected mobility at home and mobile news consumption. In other words, mobile news consumption was supported by both connected mobility between locations and spending less time at home. These patterns might be expected under harsh lockdown conditions when planning is needed before venturing out to make trips safe, legal, and efficient. With connected mobility at home, the planning is social (coordination), and with between locations, it is informational (news).

We conducted post hoc analyses for empirical clues that might help further explain the cross-national differences, including comparing indices of human mobility at the societal levels for China and the United States. Despite headlines that China's lockdowns were characteristically "brutal but effective" (Graham-Harrison & Kuo, 2020) no striking differences in the mobility indices stood out to explain the cross-national differences (see Appendix: https://osf.io/s2vux/?view_only=6d7872b33545482f893a62a5e43a2d60). As cultural values are often considered in comparative research on social behavior (Oyserman et al., 2002; Triandis & Gelfand, 1998), the appendix (https://osf.io/s2vux/?view_only=6d7872b33545482f893a62a5e43a2d60) also reports on a series of post hoc tests using a proxy for individualism-collectivism; however, the results do not point to this as an explanation for the findings. We also report on the intersecting roles of age and gender, which warrant further consideration. It is likely that the results from this study are not explained by any single variable but rather by a mix of intersecting and dynamic factors that play out within distinctive environments. Here, government, media, and a host of other factors are likely configured in distinctive ways to shape patterns of connectivity, movement, and needs when combining them.

Turning to implications, this study and its findings can help guide new research in existing streams of scholarship, including those reviewed above, that is, placemaking, mobilities, and mobile media and communication. This study enriches placemaking scholarship by deepening our understanding of the environmental conditions under which it commonly takes place. Rowan Wilken (2005) recognizes that "place—especially local place—is central to the practice and understanding of networked mobility," further noting that "place is experienced via a complex filtering or imbrication of the actual with the virtual" (para. 31). The present study offers direction for placemaking research to examine mobile media use in more localized conditions, where movement is constrained but still an important part of the "complex filtering" and "imbrication" that Wilken (2005) refers to. The findings from this study suggest that questions of how places become meaningful through connectivity and movement should consider mobility within-spaces, not only between and beyond them. This shift would give rise to new insights into how placemaking occurs across the social, physical, and digital textures people encounter as they move around within bounded settings. Privacy, for example, changes through bounded connected mobility practices, such as moving from one room to another during a voice or video call.

This research can also inform scholarship in mobility studies, much of which "encompasses research on the spatial mobility of humans" (Sheller, 2014, p. 790), and how power is reflected and expressed through their travels. According to Adey et al. (2021), "Within mobilities research we have especially focused on the ways in which 'differential mobility empowerments' relating to who can travel, when, where, and how, 'reflect structures and hierarchies of power'" (p. 2). Although this study does not have an explicit focus on power, it engages with communication and mobility, which are expressions of power and a lack of it. Places of bounded connected mobility, such as home, work, and school, are structured by power roles and dynamics that may be

reproduced, reflected, or disrupted at the intersections of movement and media use. The example above of moving around for privacy can also be used to highlight the power dynamics underlying bounded connected mobility if we look beyond mobility to ask what people are doing with it. Whether the intended privacy is for the user, their interlocutor, or the person/people around them helps reveal the power dynamics of bounded connected mobility, in this case. Relationships within places of connected mobility, such as the home (Chambers, 2016; Lim, 2020) and work (Stephens, 2018), entail a distinctive set of power dynamics from those people encounter when moving about urban and public domains, and this study offers traction for studying how movement and connectivity shape these dynamics.

As with the other areas, scholarship on mobile media and communication would benefit by placing greater emphasis on micro levels of mobility during media use. One of our findings makes this especially clear by pushing back on assumptions that "microcoordination" is characteristically practiced while people are out and about. In China, microcoordination was supported by connected mobility at home and not between locations. As noted, the situation may have been colored by broader pandemic conditions, but it still stands out for going against the conventional image of mobile-mediated coordination as a practice that happens en route. This study also has implications for newer directions in mobile communication research. One of the emerging themes in this area is a "phoneless future," with communication technology embedded in users and throughout smart vehicles, homes, buildings, factories, and cities (Campbell, de Souza e Silva, Fortunati, & Goggin, 2023; Frith, 2023). These trends can reconfigure the practices and implications of bounded connected mobility in daily life. The present study suggests that bounded connected mobility can shape communication needs and desires. Moving forward, it will be important to examine how communication needs and desires are not only fulfilled but also anticipated by communication technology as places become familiar with their occupants through their digital and physical activity.

Moving forward, it will also be important for research to expand the range of bounded settings in which people use mobile media while moving around. Gosling (2018) points to several places where the self is produced and reflected as people make their mark on places common to everyday life. His research shows how personalities are evident in the ways people arrange and negotiate artifacts in their private worlds—including home spaces, office areas, individual cubicles, cars, and digital profiles. Future research should strive for more breadth in examining the bounded "worlds" in which connected mobility takes place, such as places commonly visited for school, work, exercise, shopping, entertainment, and socializing. Questions of how the self is expressed through movement and connectivity in these places and the implications for well-being may help guide this line of research.

Future research in this area should also be sensitive to this study's limitation of relying on cross-sectional data, perhaps using longitudinal or experience sampling methods to better examine these variables over time and *in vivo*. Although the current study considered how connected mobility settings support or suppress different U&G, it is possible that overall reliance on mobile media for certain U&G can influence whether people use mobile technology while moving about home and town. Future research should try to tease out the (bi)directionality of these dynamics.

In addition, as a foundational study, the measures leave room for development. The novel measures for connected mobility include items that capture carrying around and active use of mobile media,

originally aiming for subdimensions. However, these dimensions were too correlated to parse apart. Scholars interested in pursuing connected mobility as a concept and context of mobile media use should put continued effort into developing ways of measuring it. We also recognized the limitations of items for mobile media use, creating openings for more robust measurement in the future. For example, the item measuring mobile media use for "news and information" could examine each of these dimensions individually (see Sundar & Limperos, 2013), while expanding the number of items to capture each.

This study brings a new focus to bounded settings as important sites of mobility, particularly when people are digitally connected. The findings from our cross-national survey support the proposition that connected mobility around the home can support different needs and desires than using mobile media while going about between locations. The evidence from this study helps lay the groundwork for a deeper understanding of which and how uses are shaped by connected mobility in bounded settings, as well as a wider view of the places people commonly move around while connected. However, this evidence should also be regarded as illustrative in nature, as the study has some limitations and was conducted during the early months of the pandemic. Furthermore, the findings differed cross-nationally, highlighting the societal context as an important and nuanced dynamic for scholarship moving forward.

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