



# Mobile times and temporalities: Histories of geomediation of time

new media & society  
2022, Vol. 24(11) 2548–2566  
© The Author(s) 2022  
Article reuse guidelines:  
sagepub.com/journals-permissions  
DOI: 10.1177/14614448221122144  
journals.sagepub.com/home/nms



**Didem Özkul**   
Bilkent University, Turkey

**Lee Humphreys**   
Cornell University, USA

## Abstract

The mobile ontology of locative media and ubiquity of location-aware technologies have led to an explicit focus on “where” and an implicit focus on “when” in geomediation studies. While welcoming this focus, we argue that this spatial bias has led the temporal dimensions of geomediation to be overlooked. Despite the growing interest that draws academic attention to mediation of time and temporal dimensions of media and data practices, there is still limited discussion on time and temporality of geomediation. We aim to fill this gap and open a debate about the temporality of geomediation based on seven oral history interviews that we conducted with mobile media scholars who pioneered in research in mobile phones from late 1990s onwards. These historical accounts include the narratives of how mobile phones were used for time-keeping, synchronizing, presencing, and coordinating everyday life. Hence, this article grounds mediation of time in the histories of geomediation.

## Keywords

Geomediation, mobile media, mobile phone, oral history, temporality, time

---

### Corresponding author:

Didem Özkul, Department of Communication and Design, Bilkent University, Üniversiteler, 06800 Çankaya/Ankara, Turkey.

Email: didem.ozkul@bilkent.edu.tr

## Introduction

*The history of time and the time of history hold another mystery.*

- Henri Lefebvre, *Rhythmanalysis*

The world is in the midst of a temporal turn. At a time when a global pandemic has introduced social distancing, vaccine passports, travel corridors, and other spatial restrictions, the significance and experience of time have become more important than ever. Despite the fact that the spatial effects of the pandemic have been commonly felt around the world and written about, the times and temporalities of the pandemic are experienced and felt more intensely. This is because of the changes it has brought to many individual and collective rhythms of our daily lives as well as our experiences of time.

As the humanist geographer Yi-Fu Tuan (2012) once argued, “Time is something we experience and construct. Time is experienced—is felt—when we wait, expect, or hope” (p. 100). The more we waited and hoped for the pandemic to be over, the more we felt the times of it. The *daily* and sometimes *hourly* news updates about new COVID-19 cases and death tolls, the *duration* of national and global lockdowns, the *phases* of different vaccination programs that are based on the *date* of birth, new *schedules* for work shifts, new *timetables* for transport, extended *deadlines*, and so on. All of these have reminded us of how much we rely on time and temporalities in our daily lives. Some of us have picked up new hobbies maybe because we felt that all of a sudden, we had more time in our hands. However, time is fixed. We still have 24 hours in a day. The only thing that may have changed is the sense and experience of time. As another example, it is possible to discuss how some of us have started to document our new lives online or share important moments more frequently with the loved ones that created not only new social spaces; but, most importantly, new social times. This has blurred boundaries between online and offline times though they have never been clearly defined especially in societies in the Global North. Having said that temporalities have been particularly central in how we have lived through the pandemic although they are not as obvious as the spatialities of it at first sight. A common question that we may all have had or heard during these times was “*When* will things get back to normal?.”

“When?,” the question of time, has always been an important one. However, as the social theorist and time scholar Barbara Adam (1995) asserts, “Time forms such an integral part of our lives that it is rarely thought about” (p. 13). In everyday language, time is usually taken for granted or subordinated to space even though they implicate each other, and both are socially constructed. For example, when we place a mobile call, we usually ask the other party where they are instead of asking when—whether it is a good time to talk on the phone—because we automatically assume that “where?” encompasses “when?.” This has been the case also in academic research.

There is a rich literature on the spatialities of geomeia that especially track the histories of location-awareness (e.g. Frith, 2015; Wilken, 2019; Wilken and Goggin, 2015). Recognizing the significance of these key works but also diverging from the exclusively spatial orientation, we aim to attract scholarly attention to the temporal aspects of geomeia. We do so by showing how tracing the histories of geomeia can reveal the usually

taken-for-granted or unnoticed aspects of media and communication technologies, in our case, the temporalities of mobile phones.

As our own understanding of geomeia is built around the key aspects of mobility and media (Fast et al., 2018) and convergence and ubiquity (McQuire, 2016) as the defining features of geomeia, we focus on mobile phones as the object of our study in this article. According to Green (2002), “It is a well-established premise in social thought that the dominant technologies of a particular historical period define temporal organization and cultural understandings of it” (p. 283). Therefore, focusing on mobile phones as a key geomeia technology to trace the histories of geomeia also makes sense for our research purposes.

In this article, we argue that the temporal dimensions of mobile phones have been overlooked and taken for granted while spatiality has taken the central role in relevant scholarly works especially with the introduction of location-aware features to mobile phones. We further argue that the times and temporalities of mobile phones can be made visible through a critical and historical reflection on the key scholarly contributions to the broader field. In this sense, we argue that we can use archaeologies of mobile phones to reveal the tacit perceptions about their temporalities.

To support our arguments, first, we discuss geomeia and temporal turn, where we also review the literature on time and mobile phones to identify the gap that we aim to attend to with this paper. Then, we draw on some of the key theorizations of time and temporalities. We also review the relevant literature on mediation of time and mobile times to create a foundation to build our arguments on. Following the theoretical and historical foundations of times and temporalities of mobile phones, we discuss our research methodology—oral history interviews—and the need for historical research to understand and analyze what has been taken-for-granted in mobile phone research. Our findings from a historical study with key scholars who pioneered in research into mobile phones from their initial introduction to everyday life show that temporalities of mobile phones have always been at the central stage. In doing so, we unearth and reveal the implicit temporalities and how an uncritical acceptance of the so-called “spatial turn” and “locative turn” somehow led to some of the key temporal dimensions of mobile media and locative media to be overlooked. We finish the article with a discussion of how such historical analyses can contribute to our understanding of the present. We conclude by identifying areas for future integrative research.

## **Geomeia and temporal turn**

Drawing on media studies and critical geography, geomeia is a “field that studies the complex dialectics of space, mobility and media” (Fast et al., 2018: 8). This definition of geomeia as a field seems to emphasize space and spatial characteristics of geomeia such as mobility. Although, as McQuire (2016) asserts, “Geomeia is a concept that crystallizes at the intersection of four related trajectories: convergence, ubiquity, location-awareness and real-time feedback” (p. 2), the temporal practices and dimensions of geomeia are still relatively understudied.

We argue that this is in line with two key phenomena. The first one is about the evolution of our understanding of media in relation to space and place. For example, the move

away from the understanding of media as something that has been consumed at home to media as something that is produced and consumed while on the move. Although temporalities of such practices like the scheduling of the TV programs according to the routines and rhythms of the everyday have always been embedded in the spatiality of those practices, the commonly held assumptions about the “places of media” dominated academic interest at the expense of “times of media.” Similarly, the same applies to the shift of media as something that was confined to/bounded by specific places of production and consumption to media as being ubiquitous, always with, around and on us. The second phenomenon is about the technologies and convergence of media and communications. The examples of this includes the prevalence of mobile and wireless Internet, and the embedding of location-aware and sensor-based features such as GPS in media and communication devices that revealed many place-based aspects of media and communication practices.

Symptomatic of the so-called “spatial turn” in social sciences and humanities that started particularly during the 1980s (Urry, 2007; Warf and Arias, 2009), it has not been surprising to see an increasing number of studies in media and communication studies that focus explicitly on the spatial aspects of mediation. Despite the momentous work undertaken especially in geographical scholarship (e.g. Massey, 1994; May and Thrift, 2001) that critiqued the acceptance of the “spatial turn” and rejected the dualism of space and time by introducing the term “timespace” (e.g. May and Thrift, 2001), space, and spatial aspects and implications of mediation have dominated the discursive constructions, manifestations, and materializations of almost every aspect of everyday and the mundane media practices. The most commonplace example of this dominance can be found in the spatial lexicon of the Internet such as *website*, *cyberspace*, or information *superhighway* (Graham, 1998: 166). Especially with the “locational turn” that Goggin (2012) conceptualized as a new direction for “the works of making place that has been occurring with mobile technologies” (p. 198), the focus of media and communication studies in general, and geomeia studies in particular, shifted to location-awareness and place-based interactions with media content.

Although, as argued by May and Thrift (2001), “the same period that has seen an increased attention turned to questions of space and spatiality has also seen renewed interest in questions of time and temporality” (p. 2), “temporal turn” in social sciences seems to be discussed less (c.f. Adam, 1995). Existing works by scholars who studied mobile media and communication discuss time and temporalities in relation to space and spatialities. These existing works include (but are not limited to) Hjorth and Lim’s (2012) work on mobile intimacies where they studied “the mobile phone as a technology of propinquity (temporal and spatial proximity)” (p. 477), Ling and Campbell’s (2017) edited collection on mobile communication practices and reconstruction of space and time, and Green’s (2002) work on mediation of social time and space. In all these works, time is studied in relation to space, where spatial aspects of mobile media and communication prevail temporal aspects. We argue that this is also in line with the “locational turn” (Goggin, 2012) where spatial aspects of mobile mediation have taken the central stage in mobile media and communication literature. Some other works that focus on location-aware aspects of mobile media also discuss time in the same context of space (e.g. Evans and Saker, 2017). However, there is an abundance of work that focus only on

space and spatiality of mobile media and locative media without referring to time and temporality. Thus, the academic attention to space in our field can be argued to have prevailed and shaped the future of research into mobile media. This points to a gap in the current literature and calls for work that focus on the time and temporal aspects of mobile mediation. Within communication and media studies, the recent special issue of *New Media & Society* on the mediatization of time presents a collection of work explicitly trying to address the lack of temporal studies within media and Internet studies (Lohmeier et al., 2020). We welcome this recent attention paid to mediatization of time within media and Internet studies and undertake an archeological approach to mobile mediation to reveal the temporal aspects of mediation in geomediality.

## Time and temporality

Writing in 1990, Barbara Adam started her important work about the social theory of time with this quote: “Time is a fact of life.” She also stressed the fact that “[she] did not understand time as ‘a fact of life’ but as implicated in every aspect of our lives and imbued with a multitude of meanings” (p. 2). For her, this was one of the reasons why social scientists seem to have taken time for granted. She wrote: “Time is such an obvious factor in social science that it is almost invisible. To ‘see’ it and to recognize it in not just its dominant but also its many less visible forms has proven to be hard work” (p. 3). While working on this article and doing our historical research about the temporalities of geomediality, we had to agree with her; studying time is hard work. For us, maybe that is one of the reasons why space has been more dominant in the literature on geomediality. Because space can be “seen” in ways that time cannot be.

Despite the challenge of studying time that was also acknowledged and faced by time scholars, there is a rich literature especially in sociology, geography, and philosophy that grapples with time (e.g. Bergson, 1950; Durkheim, 1947; Hägerstrand, 1974). As Lash and Urry (1994) argue, these existing works analyze “various senses of time” (p. 224). Thus, one cannot come up with *one* definition of time. These various senses of time include “the whole spectrum of ‘times’ from the most physical, mechanical, and artefactual to the experiential and cultural” (Adam, 1990: 6–7).

According to May and Thrift (2001), senses of time are “multiple and dynamic” (p. 3). To account for that multiplicity, they define four domains when discussing social practices that constitute our sense of time in relation to space. These domains are timetables and rhythms, systems of social discipline, instruments and devices, and texts (pp. 3–5).

Timetables and rhythms are keys to understanding social life along with schedules and deadlines (Adam, 1990). For example, through her analysis of contemporary school life, Adam shows how timetables establish a temporal order which shapes the sense of time in a way that divides a school day into equal durations of classes with the use of bells. She argues that such synchronization sets time limits and structures daily time both at home, work, or school (pp. 106–107). Adam further argues that structuration of daily life by timetables do not only require synchronization; but also, standardization, punctuality, and predictability, which are evaluated differently in different cultures (p. 108). In relation and similar to timetables, rhythms of the everyday also define our sense of time.

For example, for Lefebvre (2004) who is famously known for his seminal work, *Rhythmanalysis*, understanding rhythms was closely linked to understanding the interrelation of time and space and the repetitive organization of movement. Hence, Lefebvre's understanding of rhythms is closely linked to repetition.

Timetables regulate the rhythms of the everyday. Such regulation and organization are also related to systems of social discipline, which shape our senses of time especially in relation to specific settings and contexts (May and Thrift, 2001)

[. . .] just as “work” time gives shape to “family” time or “leisure” time (and vice versa) so such time only acquires full meaning when enacted in the appropriate setting (with feelings of frustration apparent when a person “brings their work home with them,” for example, or when time at the office is disrupted by the demands of family or friends). (p. 4)

Such systems of social discipline have been central in time-budget studies which studied the allocation of time for specific activities in family, work, or leisure life (Adam, 1990: 94). Differing allocations of time suggests different lifestyles and socio-economic status, which reveal existing inequalities in societies. Here, sense of time and experience of time are usually studied in relation to quantitative measures of time where time is used as a resource (pp. 95–96).

The last two domains, instruments and devices, and texts, which May and Thrift (2001) discuss, can be attributed to the mediation of time for the purposes of our study. Keightley (2012) makes use of the same domain as a starting point for her analysis of mediated time. We continue the following section with her analysis of media times and mediation of time.

## Mediation of time

Scholars have explored how our experiences of time are mediated in various ways (Finn, 2010; Kaun and Stiernstedt, 2014; Keightley, 2012, 2013; Leong et al., 2009; Nagy et al., 2021; Wajcman, 2014). Early scholarship regarding digital life articulated temporal changes as a kind of quickening or acceleration due to the network revolution (Castells, 2010), and later due to “fast media” and “fast capitalism” (Tomlinson, 2018). Keightley (2012) argues that some of this research narrowly understands time as “something external in which media technologies intervene by either speeding it up or closing it down, and therefore tends to ignore the plurality of ways in which time is produced in the practices and processes of mediated social experience” (p. 11). Similarly, Sharma (2014) argues that a focus on speed in digital life obscures the lived experience of time, which reveals power hierarchies and struggles.

Scholarship on the mediation of time has sought to understand the ways that various temporalities are produced and experienced through media technologies. Indeed, Fornäs (2016) argues that time is fundamentally always mediated, and it is commonly through media like clocks and calendars that we experience time. Leong et al. (2009) suggest that we can understand Internet time as an assemblage of temporalities. Indeed Lohmeier et al. (2020) demonstrate the multitude of ways the temporalities can be examined within new media studies to reveal institutional, technological, and experiential practices. While

recent research has sought to historicize temporal experiences of mediated communication from the 17th century and to smartphones (Farman, 2018), the aim of this paper is to bring a temporal lens to more recent historical geomeia, namely, early mobile phone use. Drawing on the mediation of time enables us to examine the mutually intersecting ways that early geomeia embodied and produced different temporalities.

## Methodology

Historical approaches are common in studies of time and temporalities (Adam, 1990: 5). To examine the temporalities of mobile phones, we decided to have a historical approach and conduct oral history interviews. As argued by Abrams (2010), “[. . .] in oral history research, practice and theory—doing and interpreting—are entwined. Conducting an interview is a practical means of obtaining information about the *past*” (added emphasis) (p. 1). This focus on the past in oral history interviews delineates them from in-depth qualitative interviews. In oral history interviews, the focus is also not on the more recent past. It is on the historical past that reveals key milestones in the happening of events in the past. Therefore, we distinguish oral histories from more common qualitative interviews in that we focus on the historical trajectories, practices and conceptualizations of our participants over the past 20 to 30 years. While participants often drew on more recent examples (especially given the COVID-19 pandemic worldwide), the goal of the oral history interviews was to engage in a reflexive process with participants, as they walked us through their early mobile phone research as well as their own experiences of using mobile phones along the axes of temporal rhythms.

As one of the prompts during the oral history interviews, we also used visual stimuli in the form of photo elicitation where we showed our participants a mobile phone print ad from early 1990s to reflect on the temporal dimensions of mobile mediation. Photo elicitation is commonly used especially in visual anthropology to collect ethnographic data or to stimulate conversations in interviews (Collier and Collier, 1986). Using this method in combination with oral history interviews helped our participants with keeping their focus on the topic where they reminisced about their early work on mobile media as well as their own practices of early mobile phone use.

### *Participant identification and recruitment*

We decided to conduct oral history interviews with prominent researchers who have played a key role in establishing the field of mobile media and communication with their pioneering work on mobile phones. We focused on researchers rather than general mobile phone users for several reasons. First, as mobile media scholars, after reviewing the literature and reflecting on our own work to date, we established that there was an implicit space-bias to early mobile communication research which took for granted and/or neglected temporal characteristics. Researchers of mobile communication in the 1990s and early 2000s as research participants would be particularly well suited to be able to reflect on this potential bias. Second, as researchers of mobile technology they were likely more attuned both professionally and personally to changes in the technological and social environment that shape mobile phone usage. Third, by discussing both

**Table 1.** Researcher participants.

Researcher name	Nationality	Gender	University affiliation	Key concepts of mobile research
Scott W. Campbell	USA	Male	University of Michigan	Coordination of everyday life
Leopoldina Fortunati	Italy	Female	University of Udine	Gender, bodies
Gerard Goggin	Australia	Male	Nanying Technological University	Global media, disability studies
Maren Hartman	Germany	Female	Berlin University of the Arts	Domestication, mediatization
Amparo Lasén	Spain	Female	University of Complutense Madrid	Digital culture, music
Christian Licoppe	France	Male	Technological University of Paris	Games, presence
Rich Ling	USA/Norway	Male	Nanying Technological University	Coordination, adoption

personal and professional experiences, we sought to empirically ground their reflections of temporalities both in perceptions of the field and their lived experiences.

We identified four men and four women who had been researching mobile communication since 2000 and had been part of the International Communication Association Mobile Pre-conference and Mobile Communication Working Group. It is not an exhaustive list of prominent mobile researchers, but we were looking for gender and geographic diversity. All eight researchers responded positively to the request, but only seven were able to be interviewed due to familial obligations during the COVID-19 pandemic (see Table 1 for the participant list).

All oral history interviews were conducted via Zoom throughout March 2021. One of the authors would lead each interview, but both authors were present for each interview. We took turns leading the interviews. The interview guide consisted of five main topics: (1) background and history of the researchers' personal mobile phone use and professional studies, (2) historical reflections on mobile phones and synchrony, (3) historical reflections on mobile phones and rhythms, (4) reactions to an old mobile phone advertisement, and (5) how temporalities fit into their key mobile and locative media concepts and research (see Table 1 for specialized areas of interest). We personalized section five for each researcher based on the key concepts and/or works they introduced into the field. After each interview, we debriefed and reflected on key insights and themes from each oral history interview.

Owing to the prominence of the research of our participants, it would be nearly impossible to keep their identities confidential when discussing their concepts and research. Therefore, all participants have reviewed the manuscript prior to publication to ensure that all quotes and ideas attributed to them accurately reflect their experiences and understandings. This kind of member check also enhances the credibility of the study (Maxwell, 2013).

While not explicitly recruited for their intellectual and professional similarities, upon conducting the oral history interviews several common characteristics among



the participants became evident. First, they tended to have sociological rather than psychological leanings. In particular, the European scholars (Fortunati, Hartmann, Lasén, and Licoppe) officially had sociology and communication or media as part of their professional titles and affiliations. Ling received his doctoral training in sociology, whereas Campbell and Goggin have degrees in communication and English, respectively. All of the scholars conduct empirical research on mobile and digital technologies for over 25 years, though some take more humanist approaches and others more social scientific. Another striking characteristic is that three of the seven researchers (Campbell, Licoppe, and Ling) previously worked for telecommunication companies in the United States, France, and Norway, respectively. Fortunati also worked closely with a telecommunication company in her early mobile phone research. Thus, the perspectives of these scholars reflect geomedias as socio-technical structures embodying the social as well as the economic and technological.

## **Data analysis**

According to Thompson and Bornat (2017), oral history interviews are used to interpret social and cultural changes. This interpretation involves relating the evidence to wider social patterns in history and building narratives of meanings from the individual stories. Given our ethnographic research background and experience in grounded theory, we decided to employ a “reconstructive cross-analysis” of the interviews, where, “the oral evidence is treated as a quarry from which to construct an argument about patterns of behaviour or events in the past” (Thompson and Bornat, 2017: 362). Thus, instead of focusing on a single story or group of stories shared by our participants, we compared them with each other and our analysis emerged from the comparisons about the temporalities of mobile phones.

We began the data analysis during the debriefing of each oral history interview with each other. We reflected on the comments from the participants and how they related to key ideas we were interested in as well as what other participants had offered. Once the interviews were all conducted, author 1 reviewed and corrected the automated transcripts. We then independently reviewed the transcripts and discussed potential themes and overall framework. Then author 2 went through the transcripts conducted axial coding (Williams and Moser, 2019) around the initial categories of synchrony, rhythm, and temporalities, which were in line with our arguments and the literature we reviewed. We then reviewed the axial coding to engage in more selective coding to merge and synthesize the axial codes.

## **Findings**

All of the participants reflected thoughtfully on their previous personal experiences with and research on mobile phones through the lens of temporalities. While some explicitly agreed with our initial assertion that spatialities had dominated mobile phone research in the early 2000s, others felt that it was tacitly omnipresent in the work on space. From their perspective, one cannot study space without thinking about time. Moreover, they reflected on the dynamics of temporalities surrounding mobile technology: temporalities

are layered and change depending on cultural context and technological development. This is in line with the common understanding of social time as described by May and Thrift (2001): “multiple and heterogenous, varying both within and between societies and individual and according to social position” (p. 2).

We use the mediation of time framework to reveal the experiential, liminal and durational nature of early geomediated time. Through our analysis, we draw on Keightley’s (2013) zones in indeterminacy to describe the ways that early geomeadia use can be understood through a temporal lens. She writes:

Time is not reducible to the temporal logics of technologies as their temporal affordances have to be translated into experienced time. It is by identifying zones of intermediacy where the juncture of different mediated temporalities are experienced, that a threefold situated analysis of mediated time which accounts for the temporalities of media as objects, its communicative or representational structure and individual textual instances can be developed (p. 68)

Thus, we examine our interview data through three aspects of temporalities. First, we examine the temporal logics of the multiple media on the phone itself, particularly early feature phones as media technologies. Then we examine how the textual content of mobile media can produce, represent, and articulate temporalities. Finally, we examine the experiential patterns of temporal communication practices—as rhythms—through the mobile media.

### *Temporalities as geomeadia technologies*

Mobile media were discussed by our respondents as a social and material media technology. This makes sense not only because mobile media are social and technical constructs. As media technologies, mobile media have “historical trajectories as individual objects” (Gillespie et al., 2014: 1). Therefore, early mobile media technologies, like feature phones in the 1990s, invoked several temporalities which shaped early geomeadia time. First, batteries were often considered temporally as to how long they could last or how long one could go before having to charge the phone again. In addition, our respondents reflected on how expensive talk time was on early mobile media. For example, when we showed participants the advertisement for a “car-less phone” (see Figure 1), they reflected on how big, clunky, and expensive it was. While the written text of the ad conveyed newness and innovation—“the portable that lets you talk all you want, when you want, where you want”—the physical nature of the image of the phone revealed its age, its historicity. For the participants, there was a nostalgic response associated with the symbolic content about the phone as a material object.

The economic infrastructure of early mobile media as media technologies was dramatically shaped by time. Rich Ling said that the phone company was hesitant to give out phones to their employees for fear of potential costs.

They were kind of in an awkward position because here’s the phone company they’re wanting to get them out into society. And, but at the same time, they did not want us to sort of run up crazy bills and stuff like that so, is it you sort of got the sense that “Okay, you can have one but don’t go crazy with it.” (Ling)

# Introducing the Car-Less Phone.

Allow us a moment to unveil the portable cellular phone by which others will be judged. The portable that lets you talk all you want, when you want, where you want. The portable that doesn't require a wheelbarrow (or a car) to carry. The Cincinnati Microwave Portable Phone.

At first glance, you might confuse our portable cellular phone with the cordless phone in your den. Its slender frame and 19 oz. weight are certainly comparable. But that's where the similarity ends.

Our phone operates nationwide with the maximum power allowed for a hand-held portable, and gives you 2.2 hours talk time or 30 hours standby. Times nearly double those of the average portable.\*

If all this sounds a little too good to be true, consider that our affiliate, Cincinnati Microwave, Inc. makes the Escort® and Passport®



radar detectors, ranked number one 10 years straight in leading car magazines.

We at Cincinnati Microwave Communications, Inc. follow their lead with a zealous dedication to customer satisfaction and service. Like our portable phone's 30-day, money-back guarantee! And Federal Express delivery.

You'll discover what's perhaps the best example of our customer service, though, when you call. You'll talk to a cellular expert who'll understand your situation, answer your questions, and solve your problems. They'll even take your order.

The Cincinnati Microwave Portable Phone. It'll take you places a car phone can't.

**CINCINNATI  
MICROWAVE  
COMMUNICATIONS**

One Microwave Plaza, Cincinnati, Ohio 45249

**Only \$1,195. Call 1-800-247-4300.**

8 a.m.-6 p.m. Eastern Standard Time  
All major credit cards accepted.  
Available only by phone.  
Dept. 100310

\*Based on three top portables. †You pay only cellular access and airtime charges during your 30-day free trial.

Phone shown actual size.

**Figure 1.** Mobile phone print ad.

Particularly for Ling who was an American living in Europe, the costs of calling distant relatives could become quite expensive. However, Hartmann also reflected on the high cost of talk time when commuting to work in a different country. Talk time costs was not always determined by distance, but national boundaries.

Within the family, early mobile media were also understood in terms of talk time. Fortunati highlighted the fact that there were conflicts within families about who used the phone at the end of the month when it was time to pay the bills. This could be interpreted in many ways; but in terms of temporalities of mobile phones, who used the phone and for how long (duration) and how often (frequency) have been at stake in Fortunati's recollection of the mobile phone use in Italy in early 1990s.

Having worked on the histories of Internet and also mobile phones, Goggin reflected on temporalities as "being, going longer in terms of the objects and the communicative function." He then added: "temporalities in terms of time of use was a bit short and discontinuous [ . . . ] whereas now temporalities seem just continuous." Here, he discussed the sporadic availability of early mobile communication and mobile service. According to Goggin, the increasing ubiquity of mobile phones has led to temporalities to be seen and experienced as more continuous.

### *Geomediation of time as representation and articulation of temporalities*

There were two ways that respondents perceived textual content of temporalities: (1) the temporal content *about* the phone and (2) temporal content produced and shared *through* the phone. The first way that participants described the ways symbolic content produced temporalities was around the concepts of progress and innovation. These were articulated explicitly or implicitly through textual representation. In describing their earliest mobile phone use, respondents reflected on how the media became a text representing innovation and status, being ahead of their time.

Respondents also reflected on the ways people produce temporal content *through* the phone. In particular, explicit communication regarding *when* people would be some place was central to early mobile media coordination. Communication about the timing of arrangements, activities, or events was not something that arose *because* of early geomediality; however, mobile phones quickly became part of the work of social coordination. In particular, Leopoldina Fortunati pointed out that social coordination for the family was (and is) often the work of women and thus the phone played a unique role in their social worlds.

These had a peculiar meaning for women because they were always dis-coordinated, mis-coordinated (I don't know how you say) each one in our house. We were separated. And the impossibility to coordinate really. So, the micro-coordination for us has meant something very peculiar. But we [researchers] did not study that sufficiently. (Fortunati)

In addition to gender, context can also play a role in how geomedial users communicate about temporal coordination. For example, Christian Licoppe reflected on how different dating apps coordinate different temporal encounters. For Licoppe, the big difference between computer-based dating services and mobile-based apps was not the ability to find potential partners based on spatial proximity, but temporal proximity:

I've been doing two kinds of studies about dating. One was on the gay application, Grindr, which was really exploiting the potential of organizing encounters based on proximity at in a very short time. (Licoppe)

Grindr enabled people to coordinate an encounter “now” or “tonight.” Licoppe found that the temporal coordination was much looser, however, on an app like Tinder. While such quick coordinations are possible on Tinder, the normative temporal expectations are different than on Grindr. Licoppe said Tinder users communicate through the app before coordinating a face-to-face encounter:

Because there’s expectation about you, you have to talk before you meet people. Maybe just for a brief time. But all the time, you have to talk. So, there’s no urgency, and so the relationship between space, time, and encounter is much looser with Tinder. (Licoppe)

Tinder users communicate with one another about topics besides the encounter before they meet up, whereas on Grindr users move much more quickly to coordinating the encounter. As a result, the narratives surrounding temporalities are different on the apps. While both locative apps are meant to facilitate face-to-face encounters, Licoppe found that the perception of temporal coordination on Grindr was much faster than on Tinder.

### *Temporalities as geomediated mobile rhythms*

Early geomediality evoked a variety of experiential patterns of temporal practices as mobile rhythms. Importantly, participants were quick to note how mobile phones at first disrupted, then were integrated into the rhythm of everyday life. Several participants reflected on the phone’s ability to interrupt their rhythm, and in particular, disrupt their work.

The mobile phone is definitely a challenge for rhythm, rather than giving a rhythm, I think that, yeah, it’s more than the machine that this potentially disturbs rhythms. (Hartmann)

While early geomediality disrupted rhythms of everyday life, early mobile phones also reinforced rhythms. In particular, Amparo Lasén reflected that the phone had become an essential tool for everyday life:

Mobile media practices, uses and experiences are an important part of the rhythmic organization of everyday life, as well as in how people remember their past and imagine their future, as both are linked to their current experience and to the ways people get information and knowledge, which are both narrowly linked to mobile media practices and uses. (Lasén)

Early geomediality became part of the rhythm of communication practices. For example, several participants mentioned standard times of the day or week they would use the mobile to call extended family. Rhythm, however, is not forever and it changes. Gerard Goggin reflected on the experience of periodicity, mobile messaging, and friendship.

Some of that is about periodicity, like you know, how you can connect with your friends with when people have so called “busy lives.” (Goggin)

For Goggin, early geomediality enabled people to have periods of rhythms of message exchange that did not necessarily have to be kept up over time but still helped to maintain the friendship.

The experiential nature of early geomeia also enabled a kind of temporal closeness. For example, Rich Ling recounted an experience when his daughter called him when she had just received word about her admittance to law school in the middle of the night. While disrupting his sleep rhythms, the ability to share the moment with her made up for the disruption.

Similarly, Scott Campbell recounted sharing a moment by taking a picture of what he was seeing on kayak trip and sending it to his son:

I've been kayaking, you know, and been able to take a picture of something really beautiful and send it to my son. And that's a cool moment of simultaneity because he's 13 so of course he sees it right away. (Campbell)

Even though Campbell sent an asynchronous text message, his son's quick immediate response led to the perception of simultaneous interaction and the sense of a shared moment. Here, the age of his son also adds a different temporal experience or expectation regarding the response time. Thus, the time it takes someone to respond to text message can sometimes become the message itself (Farman, 2018). Campbell suggested that the urge to share is natural and immediate:

When something amazing happens to you, and when you have that feeling of elation inside of you, people want to share that and [mobile phones] give you the chance to do that, right then and there. (Campbell)

Geomeia can enable a sense of simultaneity. Campbell reflected on this desire to share and expressed his concern that an over-focus on capturing an experience with our phones and sharing it with others may mean that people could miss what's going on in front of them. This experience had been described as the "absent presence" by Gergen (2002). However, what Campbell referred to in his interview was not about "absent presence" in the sense of missing out on the social interaction. It was about missing out the "moment." Thus, we interpreted Campbell's understanding of experiential in terms of temporality (moment) rather than spatiality (presence).

While the temporal experience of connection on mobile phones can lead to positive feelings of social closeness, the affective experience of unanswered or missed calls, in particular, often led to experiences of anxiety, concern, or guilt. For example, Hartmann recounted the experience of waiting for her son to get home and who did not respond to her call.

I think the possibility that this machine includes in terms of connectivity when it fails is also kind of enhances the feeling of being lost or not in control and that was definitely a moment when I felt I mean, I have the machine, but the machine doesn't deliver the relief that it was supposed to. (Hartmann)

Hartmann felt that the phone enhanced her sense of concern for her son, referring to it as a kind of "anxiety machine." The affective experience of temporal misalignment can occur across an affective continuum. Just as positive experiences can be enhanced by mobile temporal alignment, negative experiences can also be heightened with mobile

temporal misalignment. Building on the misalignment of rhythms, Goggin also mentioned disabilities and crip time (Samuels, 2017). His reflection on different experiences of time and misalignment of rhythms especially in relation to disabilities is an important aspect of mobile times and temporalities. Hence, an inclusive approach to different understandings and experiences of daily rhythms and (im)mobilities offer a generative frame for researching mobile rhythms.

## Discussion

In this study, we explicitly bring a mediation framework to geomeia by following the histories mobile times and temporalities. The zones of intermediacy (Keightley, 2013) highlight the multiplicities and complexities of early geomeia. By examining multiple times and temporalities that are at work surround early mobile phones, we highlight a taken-for-granted or unnoticed temporal history of geomeia. This enables us to reveal the temporal trajectories of locative-based mobile media toward contemporary geomeia. The key geomediated concepts of space, mobility, and media (Fast et al., 2018), and convergence, ubiquity, location-awareness and real-time feedback (McQuire, 2016) are explicitly re-examined historically within a temporal lens to demonstrate three important facets of geomediation of time.

First, the temporalities built into in the mobile phone as media technologies must be understood as contested and multiple. The mobile phone was initially seen as being freed from time and space, as a “whenever, wherever” technology. Thus, the rise of locative media shifted from a kind of spatial indeterminacy (i.e. wherever) to one that anchored mobility in space through the infrastructural integration of location-based data with GPS and Wi-Fi (Frith, 2015). But our respondents’ reflections on their earliest mobile phone use demonstrated how the economic pricing of early phones was tied directly to time as well as space. Talk time became even more expensive when calling across national borders, whether that be a train ride or an ocean away. Thus, our study highlights that significant temporal changes in pricing structures have accompanied a move toward the ubiquity of geomeia (McQuire, 2016). In addition, our study shows that talk time was construed in terms of both cost and battery time. Moreover, it reveals a temporal juxtaposition that has always been tied to a material understanding of geomeia. On one hand, the geomeia is a “whenever” technology freed from the constraints of times of availability and unavailability. On the other hand, our participants’ reflections reminded us that this “whenever technology” was significantly anchored temporally in the counting of minutes of use from its earliest use. These conflicting temporalities were built into both the material objects and network infrastructure of mobile phones.

Second, geomediated temporalities can be understood through communicative expressions. For our respondents, this most prominently occurred through expressions of coordination. As participants reflected on their early mobile phone use and research, explicit communication of not just where people were, but also *when* they would be some place were common uses of the phone. Within the literature, this is probably most clearly reflected in the concept of microcoordination (Ling and Lai, 2016; Ling and Yttri, 2002). Originally understood as a “softening of time” associated with early mobile phone use (Ling and Yttri, 2002: 143), coordination can be understood as a set of temporal

communication practices central to geomediation. These practices are contextually shaped and defined. They are also indicative of social stratification. For example, by examining the early ways of how different people along gender or class dimensions communicated about time differently, we found that time and experience of it is also related to social inequalities including gender and economic inequalities. More recently, our study reveals the hidden contextual temporal dimensions of geomediation at work on different dating apps.

Third, temporal geomediation must finally be understood through the experience of mobile rhythms. We identified several ways that early mobile phone perceptions and uses were temporally constructed in relation to rhythms. On one hand, early phones were seen (and continue to be experienced as such, though with significantly greater management) as a disruption to the rhythms of daily life. On the other hand, early mobile phones were quickly incorporated into the rhythms of daily life becoming not just an essential technology but a necessary experience of geomediated life. Early mobile phone use was also tied to the desire to share special moments through the phone with those we love and care about. Rather than experiencing these moments as disruptions to rhythms, they were experienced as punctuated moments of heightened social connection. These rhythms of everyday life punctuated with special moments of connection are essential to geomediation, which relies on patterns of spatial movement punctuated with the extraordinary. The extraordinary, however, is not always positive. The experience of extraordinary interruptions or missed connections can induce experiences of frustration or anxiety. In addition, the expectations about the alignment of individual rhythms can arouse similar feelings where the response time to a phone call or a text message becomes a message itself (Farman, 2018). Thus, the temporal experiences of geomediation must be understood as multiple, layered, and contextually defined.

## Conclusion

In this article, we argue that the temporal dimensions of mobile phones have been overlooked and taken for granted while spatiality has taken the central role in relevant scholarly works especially with the introduction of location-aware features to mobile phones. We tried to make visible the times and temporalities of early geomeia through a critical and historical reflection on the key scholarly contributions to the broader field to reveal hidden or tacit temporal geomediation processes. We argue that the “geo” in geomeia is not only about space and spatiality, but significantly, about time and temporality. Therefore, mediation of time and temporality should be acknowledged as one of the key aspects and defining features of geomeia. By making this assertion, we are not making a separation of time from space. On the contrary, it is imperative to understand time in relation to space and vice versa. To establish that relation, future research can benefit from reinterpreting the histories of geomeia from a temporal lens while looking for the connections that were somehow overlooked due to our fields’ focus on the future technologies of mediation.

Histories of media are not about looking back narrowly. They are about looking back expansively and critically. This expansive historical reflection requires questioning the commonly held assumptions about media and communication technologies, and their



social and cultural implications. Sometimes, looking through a different theoretical and conceptual lens and situating our object of study in its historical context establishes connections between the past and future of media research with all its “turns” and “shifts.” To conclude, it is now time to turn to time instead of seeing media as a way to “kill time.”

### Acknowledgements

The authors thank Scott W. Campbell, Leopoldina Fortunati, Gerard Goggin, Maren Hartmann, Amparo Lasén, Christian Licoppe, and Rich Ling (alphabetical order based on surnames) for their time, valuable contributions, and taking them to a wonderful journey in the history of mobile phones and mobile media.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### ORCID iDs

Didem Özkul  <https://orcid.org/0000-0002-7889-8020>

Lee Humphreys  <https://orcid.org/0000-0002-5005-0394>

### References

- Abrams L (2010) *Oral History Theory*. Abingdon: Routledge.
- Adam B (1990) *Time and Social Theory*. Cambridge: Polity Press.
- Adam B (1995) *Timewatch: The Social Analysis of Time*. Cambridge: Polity Press.
- Bergson H (1950) *Time and Free Will*. London: Allen & Unwin.
- Castells M (2010) *The Rise of the Network Society*. 2nd ed. Malden, MA: Blackwell Publishers.
- Collier J and Collier M (1986) *Visual Anthropology: Photography as a Research Method*. Albuquerque, NM: University of New Mexico Press.
- Durkheim E (1947) *The Elementary Forms of the Religious Life*. London: Allen & Unwin.
- Evans L and Saker M (2017) *Location-based Social Media: Space, Time and Identity*. London: Palgrave Macmillan.
- Farman J (2018) *Delayed Response: The Art of Waiting from the Ancient to the Instant World*. New Haven, CT: Yale University Press.
- Fast K, Jansson A, Tesfahuney M, et al. (2018) Introduction to geomedial studies. In: Fast K, Jansson A, Lindell J, et al. (eds) *Geomedial Studies: Spaces and Mobilities in Mediatized Worlds*. Abingdon: Routledge, pp. 1–17.
- Finn A (2010) The role of temporality in mediated communication and technology convergence. *Information, Communication & Society* 2(2): 174–200.
- Fornäs J (2016) Media times —the mediatization of third-time tools: culturalizing and historicizing temporality. *International Journal of Communication* 10: 20. Available at: <https://ijoc.org/index.php/ijoc/article/view/5082/1821>
- Frith J (2015) *Smartphones as Locative Media*. Malden, MA: Polity Press.
- Gergen KJ (2002) The challenge of absent presence. In: Katz J and Aakhus M (eds) *Perpetual Contact*. Cambridge: Cambridge University Press, pp. 227–241.
- Gillespie T, Boczkowski PJ and Foot KA (eds) (2014) *Media Technologies: Essays on Communication, Materiality, and Society*. Cambridge, MA: MIT Press.

- Goggin G (2012) Encoding place: the politics of mobile location technologies. In: Wilken R and Goggin G (eds) *Mobile Technology and Place*. New York: Routledge, pp. 198–212.
- Graham S (1998) The end of geography or the explosion of place? Conceptualizing space, place and information technology. *Progress in Human Geography* 22(2): 165–185.
- Green N (2002) On the move: technology, mobility, and the mediation of social time and space. *The Information Society* 18(281): 281–292.
- Hägerstrand T (1974) Tidsgeografisk beskrivning: syfte och postulat. *Svensk Geografisk Årsbok* 50: 86–89.
- Hjorth L and Lim SS (2012) Mobile intimacy in an age of affective mobile media. *Feminist Media Studies* 12(4): 477–484.
- Kaun A and Stiernstedt F (2014) Facebook time: technological and institutional affordances for media memories. *New Media & Society* 16(7): 1154–1168.
- Keightley E (ed.) (2012) *Time, Media and Modernity*. Basingstoke: Palgrave Macmillan.
- Keightley E (2013) From immediacy to intermediacy: the mediation of lived time. *Time & Society* 22(1): 55–75.
- Lash S and Urry J (1994) *Economies of Signs & Space*. London: SAGE.
- Lefebvre H (2004) *Rhythmanalysis: Space, Time and Everyday Life*. London: Continuum.
- Leong S, Mites T, Celletti M, et al. (2009) The question concerning (internet) time. *New Media & Society* 11(8): 1267–1285.
- Ling R and Campbell SC (eds) (2017) *The Reconstruction of Space and Time: Mobile Communication Practices*. New York: Routledge.
- Ling R and Lai C-H (2016) Microcoordination 2.0: social coordination in the age of smartphones and messaging apps. *Journal of Communication* 66(5): 834–856.
- Ling R and Yttri B (2002) Hyper-coordination via mobile phones in Norway. In: Katz J and Aakhus M (eds) *Perpetual Contact: Mobile Communication, Private Talk, Public Performance*. Cambridge: Cambridge University Press, pp. 139–169.
- Lohmeier C, Kaun A and Pentzold C (2020) Making time in digital societies: considering the interplay of media, data, and temporalities. *New Media & Society* 22(9): 1521–1527.
- McQuire S (2016) *Geomedia: Networked Cities and the Future of Public Space*. Cambridge: Polity Press.
- Massey D (1994) *Space, Place and Gender*. Cambridge: Polity Press.
- Maxwell JA (2013) *Qualitative Research Design: An Interactive Approach*. Thousand Oaks, CA: SAGE.
- May J and Thrift N (eds) (2001) *Timespace: Geographies of Temporality*. Abingdon: Routledge.
- Nagy P, Eschrich J and Finn E (2021) Time hacking: How technologies mediate time. *Information, Communication & Society* 24: 2229–2243.
- Samuels E (2017) Six ways of looking at crip time. *Disability Studies Quarterly* 37(3). Available at: <https://doi.org/10.18061/dsq.v37i3.5824>
- Sharma S (2014) *In the Meantime: Temporality and Cultural Politics*. Durham, NC: Duke University Press.
- Thompson P and Bornat J (2017) *The Voice of the Past: Oral History*. Oxford: Oxford University Press.
- Tomlinson J (2018) Fast media. In: Fast K, Jansson A, Lindell J, et al. (eds) *Geomedia Studies: Spaces and Mobilities in Mediatized Worlds*. Abingdon: Routledge, pp. 234–248.
- Tuan Y-F (2012) *Humanist Geography: An Individual's Search for Meaning*. Staunton, VA: George F. Thompson Publishing.
- Urry J (2007) *Mobilities*. Cambridge: Polity Press.

- Wajcman J (2014) *Pressed for Time: The Acceleration of Life in Digital Capitalism*. Chicago, IL: University of Chicago Press.
- Warf B and Arias S (2009) *The Spatial Turn: Interdisciplinary Perspectives*. New York: Routledge.
- Wilken R (2019) *Cultural Economies of Locative Media*. Oxford: Oxford University Press.
- Wilken R and Goggin G (eds) (2015) *Locative Media*. New York: Routledge.
- Williams M and Moser T (2019) The art of coding and thematic exploration in qualitative research. *International Management Review* 15(1): 45–55.

### Author biographies

Didem Özkul is assistant professor of communication at Bilkent University. Her research explores the everyday uses and societal implications of communication technologies, mobile media, and location data practices.

Lee Humphreys is professor of communication at Cornell University. Her research explores the social uses and perceived effects of communication technology, often through historical comparisons. She wrote the book, *The qualified self: Social media and the accounting of everyday life* (MIT Press, 2018).