Mobile Interface Theory:
Location-Aware Mobile Devices in Urban Environments

Jason Farman, **Mobile Interface Theory: Embodied Space and Locative Media**, New York: Routledge, 2012, 184 pp., $34.95 (paperback).

Adriana de Souza e Silva and Jordan Frith, **Mobile Interfaces in Public Spaces: Locational Privacy, Control, and Urban Sociability**, New York: Routledge, 2012, 224 pp., $39.95 (paperback).

Adriana de Souza e Silva and Daniel M. Sutko, **Digital Cityscapes: Merging Digital and Urban Playspaces**, New York: Peter Lang, 2009, 372 pp., $40.95 (paperback).

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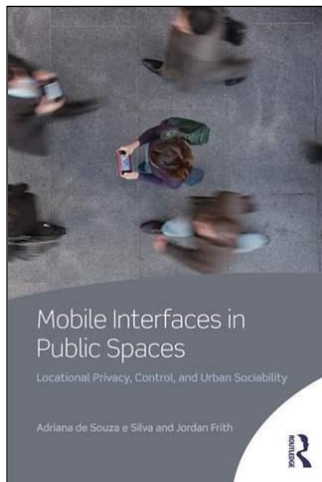University of Southern California

James Carey famously noted how the telegraph's separation of communication from transportation resulted in a "social nervous system in which signaling was divorced from musculature" (Carey, 2009, p. 215). Mobile devices make this statement increasingly true while pushing back on his assertion that geography has been made irrelevant. The authors of these books posit that mobile interfaces do not simply divide us from our surroundings or distance ourselves from others, but connect us to social networks and physical environments. These devices, particularly more powerful "smart phones," help individuals to sense, communicate, and play with others. These three books explore how mobile interfaces in the urban environment offer new ways to consider public space, though they also outline the pitfalls of constantly transmitting and receiving one's location. As multifunctional devices are adopted on a mass scale, mobile interfaces become an increasingly relevant entry point for a host of important issues having to do with mediated communication, including identity, privacy, and cooperation. This is particularly true in non-Western contexts where adoption of cellular phones has outpaced that of desktop computers.

"Interface" was a term coined in 1868 to describe energy flows in thermodynamics. It was successively applied in the burgeoning telegraphy industry to refer to "pathways for connection" (Schaefer, 2011, p. 172). Interfaces in the modern day are often more simply related colloquially to interaction with a screen, as in the phrase "graphical user interface" (GUI). Farman, Frith, and de Souza e Silva are interested in how mobile devices engender possibilities for greater connectedness, rather than in examining the devices themselves. In other words, "the mobile device is not an interface . . . [it] serves as a part of the interface that is constituted as the larger set of social relations" (Farman, 2012, p. 64). Mobile interfaces "enable people to filter, control, and manage their relationships with the spaces and people around them" (de Souza e Silva & Frith, 2012, p. 5), providing access to a digitized layer of public

space. Mobile interfaces recall the focus on connection present in the original definition of the term "interface," while expanding to include the concepts developed in de Souza e Silva's previous work on hybrid spaces as connected, mobile, and social spaces (de Souza e Silva, 2006). The focus throughout is on activity, because "the mobile interface is . . . a practice and not a set of predetermined fixtures" (Farman, 2012, p. 120). Gane and Beer's reminder to consider both "*the* interface and also *how things* interface" (2008, p. 68) is helpful to keep the focus on action.

Over approximately the last decade, thinking in the area of mobile communication has been informed by several disciplines. John Urry advocated for a turn toward a "mobilities paradigm" in sociology that includes devices, but also focuses on movements of people, objects, and information. Artistic works and writing in the humanities has critiqued how public space is co-created through surveillance and mobile technologies, providing a necessary counterpoint to industry and social science. Increased adoption of mobile devices with geolocative capabilities can be seen to extend the concerns of ubiquitous computing (ubicomp) in more everyday settings. As Paul Dourish and Genevieve Bell note, "ubicomp is already here; it simply has not taken the form that we originally envisaged" (Dourish & Bell, 2011, p. 22). We have a multitude of cheap cell phones, rather than expensive nano-computers and head-mounted displays that were fascinating to develop in a laboratory but never made it to mainstream adoption.

Mobile interface theory comes out of this lineage, primarily focusing on microsocial interactions that are mediated through mobile devices, mostly cell phones and "smart phones." The first half of de Souza e Silva and Frith's **Mobile Interfaces in Public Spaces** traces a historical lineage of devices (book, walkman, iPod) before delving into mobile devices. They draw us to consider pre-histories of such mobile devices as the book, which was developed as a medium, but also as a tool to direct attention and filter interaction in public space. Their definition of the mobile interface draws predominantly from symbolic interactionism and such microsociologists as Irving Goffman. They define his predecessor Georg Simmel's notion of the *blasé attitude* of urbanites as "an early type of interface—a psychological filter and a way of managing and controlling interactions with the city" (2012, p. 6). They extend this interest in control and personalization of space to the mobile device by expounding on how location facilitates access to a new kind of public space.

De Souza e Silva and Frith focus on "location," defined as a set of geographic coordinates used to access data through mobile devices. This layer becomes populated by information that can be accessed, added to, and edited. Their employment of this term runs counter to most scholars, who consider location to be subordinate to place and space, or even lacking in meaning (Cresswell, 2006). This shift tactfully elides rather contentious debates on place and space and allows them to jump quickly to questions of how people communicate through mobile interfaces. One primary point that de Souza e Silva and Frith make is that mobile devices connect people in stronger and more personalized ways—not just socially, but also to place. This is counter to most definitions of "virtual mobility" through devices as encouraging a placelessness that lacks grounding.

Communication that occurs in public with people on the move naturally brings up questions of power, particularly those involving privacy. De Souza e Silva and Frith draw on danah boyd and Daniel Solove to describe why privacy is relevant and highly contextual when location enters the picture. This "locational privacy" is divided into issues related to large databases of personal information that users have little knowledge of or access to, and tracking by location. The authors then employ Goffman to discuss how "presentation of location" helps to construct a mobile identity. Mobile devices do not negate public space or privatize it, but are "a physical instantiation of the constantly negotiated understandings of how public and private are related" (de Souza e Silva & Frith, 2012, p. 52). They particularly focus on such overt methods of registering one's presence with an application or website as "checking in," spending less time on ways that user scan be surveilled without their knowledge. For instance, images taken with cell phones contain locational information in the file header and can be an inadvertent broadcasting of location. Interestingly, since this book went to press, the field seems to have shifted away from checking in, toward the authors' warnings of "power asymmetries, control, and exclusion in public spaces" (ibid., p. 139) that create spaces for consumption, rather than the exploration and sociality they hope to find.

Farman's **Mobile Interface Theory** is similarly focused on the micro-level, but it relies on phenomenological and postmodern theory to describe the relationship of individuals to and through devices in the world. His thoughtful synthesis draws on Maurice Merleau-Ponty for sensory notions of embodiment, and on Henri Lefebvre's work on the creation of space to support his argument that embodiment is key to the production of space in an age of ubiquitous computing. Embodiment refers to how "we create space as we create our bodies across digital media" (2012, p. 22). In other words, we "tune" space through practices with devices and how we integrate them into our daily routines (Coyne, 2010). Like de Souza e Silva and Frith, Farman rejects simple assertions of virtuality as entirely immersive, stating that, "fully, embodied presence is always being deferred" (2012, p. 30). For him, embodiment and space are co-created, leading to new possibilities for reflection. To that point, he draws on Bertolt Brecht's concept of hypermediation, which comes from theatrical environments that were designed to "[resist] immersion in order to afford the audience a space for critique" (ibid., p. 81). He highlights Paula Leine's *San Francisco ↔ Baghdad* project, which maps the city of Baghdad onto a map of San Francisco. A digital marker is placed at the map where there was a bombing in Baghdad, and a geocache (hidden container) is hidden at the corresponding site in San Francisco. The act of wandering the city creates a comparison between lived space and mapped representations, reimagining the city as a space for critiquing the militaristic foundations of GPS, and indeed, the military-industrial complex as a whole. In *Digital Cityscapes*, Frans Mäyrä and Petri Lankoski similarly describe "fallacies of immersion" which focus on the ideal of total immersion through audiovisual stimulation. According to these authors, the *in situ*, neither-here-nor-there nature of mobile communication affords pedagogical opportunities.

Farman's concept of the "sensory-inscribed body" describes a sense of proprioception (or unconscious understanding of where one is and the extent of one's body in the world), and how bodies are inscribed with meaning. The particular situation or context of communication through mobile devices is an
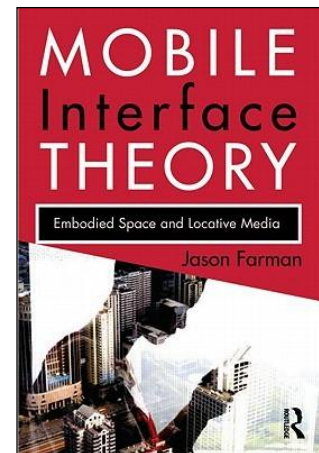
ongoing negotiation between a proprioception and sociocultural inscription. Farman's concern with co-created space and unconscious sensations is the biggest difference between his definition and that of de Souza e Silva and Frith, who have a more pragmatic orientation of location as an empirical point that enables access to a wealth of information and ways of actively using resources and presenting one's self. Farman is more embracing of the idea that space is the product of interrelations, constituted through interactions and constantly under construction (Massey, 2005).

Farman then draws parallels taken from the rise of social computing to examine opportunities for intersubjectivity through social norms of reciprocity and relating with others through locative media. Locative media permit the discovery of new perspectives, and the concept of the mobile interface is expanded to be the "set of cultural relations that serve as the nexus of embodied production of social space" (2012, p. 64). Farman's definition of mobile interfaces serves him well in difficult discussions of ethics in locative games and applications. For example, he provides an example of the power of Huizinga's magic circle in the live action role-playing game (LARP) *Momentum*. Here, players mis-read a clue and incorrectly thought an inebriated homeless woman was part of the game, interrogating her for hours and stealing her money while being immersed in gameplay. Devices that literally project categories on individuals (SixthSense) and SMS texts on walls of community spaces (TXTual Healing) are used as entry points for discussions of social media and community storytelling. He ends the book by ruminating on time and materialism, in particular, on dwelling and homes, which Daniel Miller called the "elephants of stuff" (Miller, 2010, p. 81). This pushes concepts of mobilities past assumptions of speed and lightness, situating the discussion in historical context and returning to his theme of embodiment. He positions the mobile interface here as a durable concept that extends past the life cycle of devices. As a colleague joked to him, "make sure they don't put a picture of a cell phone on the cover . . . nothing will date it more quickly" (ibid., p. 131). People were pessimistic about the success of iPads; now, there are a number of devices coming out with screen sizes between that of a mobile phone and tablet.

Digital Cityscapes, edited by Adriana de Souza e Silva and Daniel Sutko, focuses on location-aware mobile games (LAMGs) and location-based mobile games (LBMGs) that were mostly developed in academic groups, startup companies, and artistic contexts. The book is split between theoretical approaches, designing, and educational uses of LAMGs. These chapters are generally case studies focused on how play in mobile contexts acts as a pedogogical or motivational agent. This collection of mostly qualitative studies leans heavily on Huizinga to describe levels, overlays, and rewards that entice users to participate in LAMGs and LBMGs. *Digital Cityscapes* presents tantalizing possibilities through rich case studies that are generally optimistic and theory-agnostic. Negative effects of mobile devices concern privacy, corporate control, and the ethics of gameplay in public spaces. For example, Christian Licoppe and Yoriko Inada described a case of stalking in the game *Mogi*, which has a radar feature to show a map of nearby objects and friends. This book makes a major contribution in documenting early development in the field, starting approximately when the Clinton administration stopped scrambling the accuracy of GPS signals in 2000 and Howard Rheingold's *Smart Mobs* was published in 2002.

The hope of mobile interfaces is that mobile devices "strengthen users' connections to the space they inhabit" (de Souza e Silva, 2006, p. 270) and tap pedagogical possibilities through situated interaction (Suchman, 2007; Wenger, 2002) and play (Gee, 2007). Interfaces become a space of critique, one where play meets everyday use. This promise drives much of the interest in this area, but mobile devices are still used in much more mundane ways. Geolocative applications are still compared with mobile device use as a whole. Location-based services on powerful smartphones have not reached the mainstream, even among people who own one. For example, although over a quarter (28%) of online American adults were found to use location for directions and similar services in a 2011 PEW survey, use of such geolocative applications as FourSquare was only tracking in the single digits (4%) among American adults (Zickuhr & Smith, 2011).

These authors spend considerable time fleshing out micro-level questions in a very new field of research, so the picture they present is understandably preliminary. D'Andrea, Ciolfi, and Gray (2011) raise an important point when they note how micro-sociological and phenomenological approaches "address fundamental philosophical and theoretical questions about the predicaments of modernity, but are not as engaged in systematically examining ways to probe, test, replicate, represent and generalize knowledge about mobility" (p. 156). They describe a particularly strong need for multi-level research that systematically investigates how power is expressed or refuted through mobile devices. De Souza e Silva and Frith dedicate an entire chapter to "power in location-awareness," and in so doing, shift from a microsociological framework to Foucault, a familiar cultural scholar commonly invoked to discuss power and surveillance. Farman's use of inscription is more native to questions of power, and he provides ample examples of empowering games that tackle serious problems over simple entertainment, as well as ethical dilemmas imposed by mobile applications and devices. Farman suggests that we should be guarded in our criticism, as "the 'interfaceless interface' of pervasive computing carries with it the threat of exercising hegemony by receding to the background and avoiding critique" (2012, p. 29).

Further extending the concept of mobile interfaces to better capture the motivations of different stakeholders would be helpful to describe a delicate interplay of enablement and constraint. The business side of mobile communication includes questions of carriers, networks, policies, and monetization. This discussion is quite limited, visible mostly in Xiong, Ratan, and Williams' outline of areas of economic growth for LAMGs in *Digital Cityscapes*, and also in the few pages de Souza e Silva and Frith dedicate to location-based advertising. To be fair, the field of mobile business is highly unsettled. It would be difficult to predict the declining popularity of check-ins, for example. Since these books were written, such geolocative applications that focus on check-ins as Loopt and Gowalla, both mentioned in these pages, have been acquired, decommissioned, or merged with other services to leverage data with users on the move. When reflecting on motivations to sell Loopt (another early geolocative application) to banking service Green Dot, CEO Sam Altman stated, "instead of being about check-ins, it can be about payments" (Gannes, 2012). FourSquare's "check-in" feature has been decreasing in popularity. Instead of further developing FourSquare's check-in feature, the company announced that they would focus on leveraging existing data to "[give] users suggestions on where to go, based on information like the time of day, the popularity of nearby places and past check-ins" (Wortham, 2012). This takes away the fear of presentation of location, even as it relies on—and adds to—an unknown amount of user data that is the

property of companies. As mobile devices become ubiquitous, they threaten to become increasingly commoditized and provide fewer opportunities for cross-cultural interactions and collaborations.

Viewing the mobile interface as a nexus for interactions with layered data and many-to-many communication highlights the need for further elaboration across sub-disciplines of communication. Although they are not framed as such, mobile interfaces appear quite compatible with the networked paradigm of communication. Computer-mediated communication (CMC) predominantly takes a psychological and interpersonal perspective, tending to sidebar questions of how devices are embedded in physical contexts, histories, and social situations. Media convergence could benefit from a closer reading of the interactive capabilities of the mobile medium, particularly as concerns claims of accessing public space. Mobile versions of legacy media, such as newspapers, have proven to be beneficial to a healthy public sphere, but they often do not take advantage of mobile affordances. Together, these books are an invitation to "penetrate through the interface and study the underlying social processes that drive the use of technical artifacts" (Tuomi, 2005, p. 23).

Mobile Interface Theory and *Mobile Interfaces in Public Spaces* are a step forward for research on how mobile devices are used in modern society. These texts present a set of more durable concepts that describe mobile interfaces as the micro-level part of a larger system where individuals engage with webs of contextual information, contribute media to new kinds of public spaces, and gain a sense of proprioception. The authors' heady mix of concepts and examples will have long-lasting implications for research on mediated relationships, media convergence, and marketing. De Souza e Silva and Frith revive the fascination with movement, interaction, and pluralistic communities in urban spaces that was so prevalent in the Chicago school of sociology. Farman's notion of the sensory-inscribed body is theoretically rigorous, and his provocations deserve repeated readings to capture their insight. Although these tomes draw on quite different theoretical lineages, they similarly disrupt simplistic understandings of mobile devices. They question the assumption that devices are inherently distancing, reject simple notions of virtuality, and call for a closer consideration of connectedness. What they do not offer in closure, they more than make up for with an abundance of open questions that are well worth asking.

References

Carey, J. W. (2009). *Communication as culture: Essays on media and society*. New York: Routledge.

Coyne, R. (2010). *The tuning of place sociable spaces and pervasive digital media*. Cambridge, MA: MIT Press. Retrieved from http://site.ebrary.com/id/10386194

Cresswell, T. (2006). *Place: A short introduction*. Malden, MA: Blackwell Pub.

D'Andrea, A., Ciolfi, L., & Gray, B. (2011). Methodological challenges and innovations in mobilities research. *Mobilities*, *6*(2), 149–160. doi:10.1080/17450101.2011.552769

de Souza e Silva, A. (2006). From cyber to hybrid: Mobile technologies as interfaces of hybrid spaces. *Space and Culture*, *9*(3), 261–278. doi:10.1177/1206331206289022

de Souza e Silva, A., & Frith, J. (2012). *Mobile interfaces in public spaces: Locational privacy, control, and urban sociability*. New York: Routledge.

Dourish, P., & Bell, G. (2011). *Divining a digital future: Mess and mythology in ubiquitous computing*. Cambridge, MA: MIT Press,

Farman, J. (2012). *Mobile interface theory: Embodied space and locative media*. New York: Routledge.

Gane, N., & Beer, D. (2008). Interface. In *New media: The key concepts* (pp. 53–70). Oxford, UK, and New York: Berg.

Gannes, L. (2012, March 9). Loopt's Sam Altman on why he sold to green dot for $43.4M —Liz Gannes — Social — AllThingsD. Retrieved from http://allthingsd.com/20120309/green-dot-buys-location-app-loopt-for-43-4m

Gee, J. (2007). *What video games have to teach us about learning and literacy* (Rev. and updated ed.). New York: Palgrave Macmillan.

Massey, D. B. (2005). *For space*. London and Thousand Oaks, CA: SAGE Publications.

Miller, D. (2010). *Stuff*. Cambridge, UK: Polity Press.

Schaefer, P. (2011). Interface: History of a concept, 1868–1888. In D. Park (Ed.), *The long history of new media: Technology, historiography, and contextualizing newness* (pp. 163–175). New York: Peter Lang.

Suchman, L. A. (2007). *Human-machine reconfigurations*. Cambridge, UK: Cambridge University Press. Retrieved from http://www.myilibrary.com?id=70976

Tuomi, I. (2005). Beyond user-centric models of product creation. In L. Haddon, L. Fortunati, A. Kant, K.-H. Kommonen, E. Mante, & B. Sapio (Eds.), *Everyday innovators researching the role of users in*

shaping ICTs (pp. 21–38). Dordrecht, Germany: Springer. Retrieved from
http://www.myilibrary.com

Wenger, E. (2002). *Communities of practice: Learning, meaning, and identity.* (Reprint.). Cambridge, UK:
University of Cambridge.

Wortham, J. (2012, June 7). In app overhaul, Foursquare shifts to recommendations. *The New York
Times*. Retrieved from http://www.nytimes.com/2012/06/07/technology/in-app-overhaul-
foursquare-shifts-focus-to-recommendations.html?_r=2

Zickuhr, K., & Smith, A. (2011). *28% of American adults use mobile and social location-based services* (p.
13). Pew Center for Internet & American Life. Retrieved from
http://pewinternet.org/Reports/2011/Location.aspx