The Excitable Crowd:

Characterizing Social, Mobile Space

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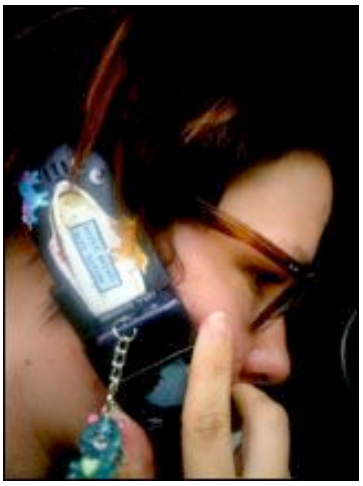


Figures 1, 2, 3. A Brazilian girl shows off her mobile phone. A United States woman customized her mobile. An elderly woman in Rome rests and places a mobile call. (Source: Ken Anderson, Larissa Swindle, Esther Van Nes)

We live and die by our mobile phones. We wake to their alarms, customize them to suit our personalities, express our love and frustration on them, coordinate movements and conduct business through them. In fact, most of us are no more than one meter away from our mobile phones at any time.[1] The reach of mobile technology is wider than that of the Internet and landline telephony. People who can't read may still use mobile phones, where using other information technology proves more difficult. The portability of the mobile makes it shareable among groups or villages of people. The mobile telephone changes our relationships with our cities and each other. Cultural anthropologist Sadie Plant writes:

> Whatever it is called, and wherever it is used, this simple, accessible technology alters the way in which individuals conduct their everyday lives. It has extensive implications for the cultures and societies in which it is used; it changes the nature of communication, and affects identities and relationships. It affects the development of social structures and economic activities, and has considerable bearing on its users' perceptions of themselves and their world.[2]

Mobile technology reinforces urban behavior, rather than replacing it with new interactions. With the proliferation of cyber technology in the 1990s, proponents of urban dissolution suggested that technological infrastructures would replace the need for face-to-face

[1] Lara Srivastava, "The Social Impact of Mobile Technologies" (paper presented at the World Summit on the Information Society, Geneva, 2003).
[2] Sadie Plant, "On the Mobile. The Effect of Mobile Telephones on Social and Individual Life.," (Motorola Report, 2001), 23.

contact.[3] It would be the "death of distance,"[4] as one writer called it. People would no longer use their cities: they would get everything they needed through home delivery and telepresence. Anthony Townsend points out that ironically, many of these descriptions were written by people in their buzzing urban offices.[5] In reality, this forecasted trend toward dissolution was merely anecdotal. Townsend writes, "Advances in telecommunications and information technology actually increased the need for institutions, people, and districts that can extract meaningful knowledge from the rapidly increasing glut of undifferentiated information."[6] If anything, networked technology made it—and continues to make it—all the more necessary for people to interact with their cities. People become less fixed and increasingly mobile with their communication technologies. In other words, "the network is brought to the user,"[7] says Townsend. "Suddenly, digital networks could be integrated with the best urban spaces to reinforce their value as venues for face-to-face interaction. Far from bringing about the death of cities, as the urban dissolutionists had envisioned, digital infrastructure actually was enhancing the advantages of dense urban spaces for human interaction."[8]

This connection of network and user may reinforce urban pathways, but it changes notions of space and place. In the not-so-distant past, in order to reach a person, one called a home phone number and reached someone from the household. The person on the other end of the phone was tethered to the wall or desk throughout the duration of the call. Sociologist Barry Wellman calls this type of communication "place to place."[9] In contrast, the mobile phone changes communication to a person-to-person paradigm: no matter where you are, *you* individually are reachable; *you* individually may reach someone else. He writes:

> Moving around with a mobile phone made me almost completely independent of place. It was I-alone that was reachable wherever I was: at a house, hotel, office, freeway or mall. Place did not matter; person did. The person has become the portal […] The shift to a personalized, wireless world affords truly personal communities that supply support, sociability, information, and a sense of belonging separately to each individual. It is the individual, and neither the household nor the group, which is the primary unit of connectivity […] Because the connection is to the person and not the place, it shifts the dynamics of connectivity—typically households or worksites—from places to individuals.[10]

Intimate connections, too, tend to be reinforced by mobile technology. Unlike the online communities and blogs, which promise to introduce their users to a potentially broad, anonymous

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[3] Anthony Townsend, "Wired/Unwired: The Urban Geography of Digital Networks" (Massachusetts Institute of Technology, 2003), 56.
[4] Frances Cairncross, *The Death of Distance : How the Communications Revolution Will Change Our Lives* (Boston, Mass.: Harvard Business School Press, 1997).
[5] Townsend, "Wired/Unwired: The Urban Geography of Digital Networks", 58.
[6] Ibid., 63.
[7] Ibid., 119.
[8] Ibid., 119-20.
[9] Barry Wellman, "Physical Place and Cyberplace: The Rise of Personalized Networking," *International Journal of Urban and Regional Research* 25, no. 2 (2001): 231.
[10] Ibid.: 238.

audience, the mobile phone bolsters existing relationships. Studies in a variety of countries (Finland, Japan, Norway, the UK) across different age groups consistently show that people use their mobile phones to communicate with the same two to five people.[11] This intimacy is the case even though mobile phone users may show 100-150 people in their address books,[12] say they talk to "buckets of friends,"[13] or engage in ritualized exchanges of mobile numbers (such as with business cards in Japan).[14]

Mobile technology shifts urban experiences in a different way than other networked technologies have. Its portability on the body makes it personal and intimate, yet its use in public shifts how space is used. Rather than keeping people at home, it allows them to roam in the city and be accessible at all times, for better or for worse. With mobile technology, women are the power users, contrary to stereotypes of women using technology. These questions open up other questions. In an urban sense, does the mobile phone change the concept of social space? Does it shake the power structure? What does the hybrid mobile social space look like?

This chapter on the mobile experience of women is one thread in an overall project. Focusing on the female mobile experience bracketed themes that will be discussed in future chapters, including security, territory, privacy, globalization, and gaming. It then turns to a framing of social space, strategy and tactic, and hybrids based on the works of Henri Lefebvre, Michel de Certeau, and Bruno Latour. In doing so, it opens up a broader set of questions this broader thesis will examine in its future chapters.

Women's urban space, mobility and mobile phone use

Women's urban mobility differs from that of men. In the mid to late 19th century, for example, a woman out in the city without a man indicated the woman was a "public woman" or prostitute. Though this tends not to be the situation today, urban space still may different for women than men. Doreen Massey writes,

> … space and place, spaces and places, and our senses of them (and such related things as our degrees of mobility) are gendered through and through. Moreover they are gendered in a myriad different ways, which vary between cultures and over time. And this gendering of space and place both reflects and has effects back on the ways in which gender is constructed and understood in the societies in which we live.[15]

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[11] Mizuko Ito, Daisuke Okabe, and Misa Matsuda, eds., *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life* (Cambridge, MA: MIT Press, 2006), 9.
[12] Rich Ling and Birgitte Yttri, "Hyper-Coordination Via Mobile Phones in Norway," in *Perpetual Contact : Mobile Communication, Private Talk, Public Performance*, ed. James E. Katz and Mark Aakhus (New York: Cambridge University Press, 2002), .
[13] Rich Ling, "'She Calls, [but] It's for Both of Us You Know': The Use of Traditional Fixed and Mobile Telephony for Social Networking among Norwegian Parents," in *R&D Report 33/98* (Kjeller, Norway: Telenor, 1998), 2.
[14] Michael Barry, "The Uses and Meaning of I-Mode," *Estudios de Juventud* 57, no. 02 (2002): 158.
[15] Doreen Massey, "Space, Place and Gender," in *Gender Space Architecture: An Interdisciplinary Introduction*, ed. Jane Rendell, Barbara Penner, and Iain Borden (New York, NY: Routledge, 1994), 129.

These spaces and places, while problematic, are the locus of gender construction and status for both men and women, Mary P. Ryan states: "Social space, especially the everyday uses of city streets, serves as a scaffolding upon which both gender distinctions and female identity are constructed. Woman's status is often, perhaps inappropriately, defined in spatial metaphors of woman's place and the female sphere."[16]

These constructs may continue to exist not only on the street, but also in social hierarchies and language, as Sarah Jain writes in her article on women, errands and technology:

> In feminist thought, both physical mobility and metaphors of mobility have had particular resonance, especially as a way of making concrete the historical and current limitations on women's educational, political, social and economic participation in public and private life. From the suffragettes' ambivalence about the home to women's exclusion from early automobiling to post-colonial work on border crossings, theorists have evoked the desire to transform and transgress space to symbolize the multiple ways in which women are kept in their place and prevented from attaining either geographic or upward mobility.[17] Indeed, the confusion between social and physical mobility is captured in the still prevalent term 'glass ceiling', which spatializes the ways in which gender 'upward' mobility is limited through social structures. In this feminist sense, the potential for mobility very much defines one's possibilities for self-expression and personal fulfillment.[18]

Though this began to shift in the last third of the 20th century, urban space still tests the notion of a male-female dichotomy. Ryan states:

> On the one hand, the behavior of men and women in public can be orchestrated so as to lend a special legitimacy and sharper definition to gender differences. […] On the other hand, gender distinctions might be corroded by the informal everyday uses of public space by real men and women. The spontaneity, diversity, and volatility of life on the streets of the big city might not be so easily corralled into neat distinctions between the dualistic classifications of male and female.[19]

In terms of the mobile phone, experience for women seems also to take on different characteristics. Though fewer women may own mobile phones than men, they universally tend to use the mobile at least as much, if not more, than their male counterparts, according to studies of mobile phone users in Norway, Germany, Russia, Italy, Tanzania and South Africa.[20] Where men

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[16] Mary P. Ryan, *Women in Public : From Banners to Ballots, 1825-1880*, *The Johns Hopkins Symposia in Comparative History ; 15th* (Baltimore: Johns Hopkins University Press, 1989), 59.
[17] Elizabeth Pritchard, "The Way out West: Development and the Rhetoric of Mobility in Postmodernist Feminist Theory," *Hypatia* 15, no. 3 (2000).
[18] Sarah S. Lochlann Jain, "Urban Errands: The Means of Mobility," *Journal of Consumer Culture* 2, no. 3 (2002): 389.
[19] Ryan, *Women in Public : From Banners to Ballots, 1825-1880*, 59.
[20] For specifics on these studies, please see Leopoldina Fortunati and Anna Maria Magnanelli, "Young People and the Mobile Telephone," *Estudios de Juventud* 57, no. 02 (2002).: 63 (Italy), Joachim R. Höflich and Patrick Rössler, "More Than Just a Telephone: The Mobile Phone and Use of the Short Message Service (Sms) by German Adolescents: Results of a Pilot Study " *Estudios de Juventud* 57, no. 02 (2002): 80. (Germany), Rich Ling, "Adolescent Girls and Young Adult Men: Two Sub-Cultures of the Mobile Telephone " *Estudios de Juventud* 57, no. 2 (2002): 40. (Norway), Olga Vershinskaya, "Mobile Communication. Use of Mobile Phones as a Social Phenomenon--the Russian Experience," *Estudios de Juventud* 57, no. 02 (2002): 142. (Russia), Diana Coyle, "Overview," in *Africa: The Impact of Mobile Phones. The Vodafone Policy Paper Series* (London, UK: Vodafone, 2003), 47.

are more likely to use mobile phones for utilitarian purposes, women use these technologies as enabling and navigational mechanisms for their social networks.[21]

Mobile technology can make a woman feel safer in an urban context, by giving the sign she is unapproachable and providing a ready network of intimates through her mobile. It facilitates "approximeeting,"[22] the practice of using the mobile phone to fluidly coordinate meetings and appointments on the fly—with its positive and negative ramifications. And finally, in the case of the developing world, the leapfrogging possibilities of mobile technology mean that women can build their own businesses, which supplement their family incomes to a significant extent. Where mobile technology is concerned, might mobility be more feminine than masculine?

Mobile representation: from safety to self-expression

When people first buy mobile phones, whether for themselves or their family members, the primary reason they do so is for safety.[23] This is the basis for all other, more expressive forms of mobile communication.[24] For women, this is particularly the case: without safety on the part of the woman, the mobile phone does not get used for other purposes.

Figure 4. Woman in Tokyo draws knees up to chest as she makes a mobile call. (Source: hesiem.over-blog.com/.)

From a spatial perspective, women use a mobile phone to build and convey a sense of safety and security. They do this through positioning of the mobile phone, their personal body language, and use of the telephone (real or faked). All of these activities created a sense of uninterruptability and a means of avoiding unwanted advances and conversation.

Space making happens on a variety of levels with public mobile users: they make secure spaces through their body language. "[M]any people sitting down in public spaces – at café tables, for example, or on park benches—tend to draw their bodies up, take their feet off the ground, or otherwise create a feeling of safety and withdrawal."[25] On a more social level, mobile phone users exchange in unconscious social play with each other and the positioning of their mobile phones. For instance, if a group of people is sitting together and

[21] Ling, "Adolescent Girls and Young Adult Men: Two Sub-Cultures of the Mobile Telephone ": 3.
[22] Plant, "On the Mobile. The Effect of Mobile Telephones on Social and Individual Life.," 61.
[23] Virpi Oksman and Pirjo Rautiainen, "'I've Got My Whole Life in My Hand." Mobile Communication in the Everyday Life of Children and Teenagers in Finland," *Estudios de Juventud* 57, no. 2 (2002): 28.; Fortunati and Magnanelli, "Young People and the Mobile Telephone," 74.; Vershinskaya, "Mobile Communication. Use of Mobile Phones as a Social Phenomenon--the Russian Experience," 144.
[24] Ling and Yttri.
[25] Plant, "On the Mobile. The Effect of Mobile Telephones on Social and Individual Life.," 52.

one party displays a mobile phone, the others are likely to follow suit. If a woman and man sit together, the woman is unlikely to be the only one showing her mobile.[26] But even when a woman is alone, she may display her mobile phone as a sort of "do not disturb" sign to whatever potential interlopers there may be. Plant writes:

> It was also observed that 60 per cent of lone women had a mobile on show – a far higher percentage than that of lone men (47 per cent), men together, or men with together with women. Many women saw this reflecting their own experience of the mobile as a valuable means of keeping unwanted attentions at bay. A mobile projects an image of self-containment, and can even legitimise solitude: I'm not alone, I'm with my mobile phone.[27]

Having a mobile at hand makes women feel more secure in urban spaces. In the light of a recent assault of an acquaintance, a group of women on a San Francisco-based email list said they called friends on mobile phones when they were alone on the street (sometimes walking down the middle of the street in order to avoid dark spaces), walking to and from the bus stop, or waiting for the tram or bus.[28] The combination and layering of mobile technology with movement through the city connotes the woman is not alone—she is in the co-presence[29] of someone else who is not physically present. Plant also discovered similar findings in her observations:

Figure 5. UK Home Office advertising campaign on mobile phone theft. Source: UK Home Office.

> The mobile self… gains a new sense of security: allies and assistants are always on call. Women in several cities said that the mobile made them feel safer, more confident, and in control, and were particularly keen to emphasise the value of the mobile as a phone-shield against unwanted attentions. Several Birmingham entrepreneurs say they use their mobiles as means of deliberately absenting themselves from their present environments and so keeping other people at bay: 'If I arrive at a meeting where I don't know anyone, I play for time and composure by doing things with my mobile.' This sends out other messages to the room as well: it says that one is busy and not to be disturbed, and temporarily extends one's personal space.[30]

This type of action may no longer prove effective. In London during the summer of 2005, the city began a three-year advertising campaign about theft awareness. One of its focus areas was mobile phone theft, with photographic bus and Tube posters stating, "Showing off your phone is showing off to thieves." Among text-only ads in the series are "Don't play with it in public" and "Some blokes want your number. Others just want your phone." It is interesting to note that in this advertising campaign (which also dealt with home break-ins and burglaries of music players), there are no men depicted in the mobile phone ads,

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[26] Ibid., 41.
[27] Ibid., 42.
[28] Allison Yates, 2006.
[29] Co-presence is a specific term to social and mobile technology use. It connotes the presence of someone who does not share the same physical space, but is nonetheless present in interaction with the person.
[30] Plant, "On the Mobile. The Effect of Mobile Telephones on Social and Individual Life.," 62.

and that the text-only ads speak directly to women. In one ad, a woman stands on a rainy high street in the afternoon, holding a shopping bag with an arrow that says, "Camera Phone." She looks at the ground, her left hand holding her phone, both body language markers of personal, let-me-be space. In the other ad, two teenage girls talk on the phone. One, looking off to the right, wears a t-shirt with an arrow, announcing, "Look! Camera phones!" The other young woman's face is obscured, as she looks over her left shoulder, perhaps at a shop or flat window.

The Home Office Crime Reduction website in the United Kingdom did not provide crime statistics with its campaign posters. One wonders whether women have been hit with more mobile phone theft. If so, perhaps the ads are a useful deterrent to idle time mobile phone use. (From personal experience, I admit that the ads had me thinking twice about taking out my mobile as I waited for the Tube.) But if this kind of space making using mobile technology is no longer safe for women in particular, how can women use their mobile phones to engender a sense of security?

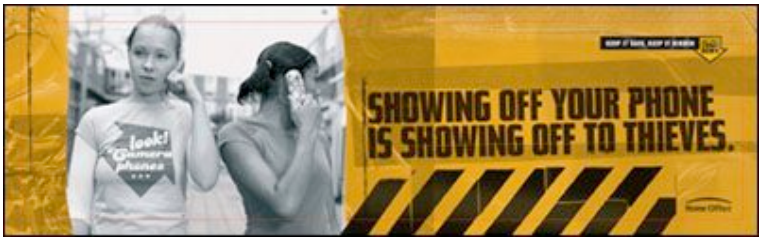

Figure 6. UK Home Office campaign focused on adolescent girls. Source: UK Home Office.

Japanese girls, the *keitai*, and urban space

In Japan, the *keitai* (translated as "something you carry with you"[31] – a mobile phone particularly used for emailing and sending photos) has been massively adopted: 70% of the entire population carries one.[32] According to one study, grade school and adolescent girls were almost twice as likely to carry a *keitai*.[33] Of particular interest to producing urban space is the mobile use of the *kogyaru*—street-smart teenage girls—and *oyaji*—older men and fathers.[34] Kenichi Fujimoto has focused on the dynamic and interplay throughout the 90s, first with the adoption of pagers, and now with the proliferation of the *keitai.* He considers these "territory-generating apparatuses,"[35] wielded by savvy teen girls with a predilection toward loose socks and munching snacks on the train.[36]

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[31] Ito, Okabe, and Matsuda, eds., *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, 1.
[32] Misa Matsuda, "Discourses of *Keitai* in Japan," in *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life.* , ed. Mizuko Ito, Daisuke Okabe, and Misa Matsuda (Cambridge, MA: MIT Press, 2005), 19.
[33] Yukiko Miyaki, "*Keitai* Use among Japanese Elementary and Junior High School Students," in *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life.* , ed. Mizuko Ito, Misa Matsuda, and Daisuke Okabe (2005), 282.
[34] Kenichi Fujimoto, "The Third-Stage Paradigm: Territory Machines from the Girls' Pager Revolution to Mobile Aesthetics," in *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life.* , ed. Mizuko Ito, Misa Matsuda, and Daisuke Okabe (Cambridge, MA: MIT Press, 2005), 79.
[35] Ibid., 98.
[36] Ibid.

The *keitai* offers a tactic in Michel de Certeau's definition, a means of fighting the dominant male culture in Japanese urban space. The *keitai* does not even need to be used: its presence creates its own meaning. Its social and cultural constructions bombastically create *kogyaru* space. Fujimoto writes:

Figure 7: A *kogyaru* in Japan, chatting on her mobile before descending to the subway (Source: The Japan FAQ)

> With a *keitai*, a girl can turn any space into her own room and personal paradise (*kekkai*), whether that be her favorite café or her own stall in a flea market. The *keitai* is a jamming machine that instantly creates a territory—a personal *keitai* space—around oneself with an invisible, minimal barricade.
>
> Even when signals aren't sent out as voice or text, carrying a 'cute' *keitai* is itself an effective visual anti-*oyaji* signal. But sadly, when an *oyaji* plays with his *keitai* on the train instead of reading a newspaper, the *keitai* turns into an *oyaji keitai*. The same cute *keitai* in the hands of a young attractive man becomes a greasy, phallic object when held by a dirty *oyaji* even though its shape and size remain the same. When an *oyaji* has command of the *keitai*'s vibrating signal, the tremors evoke perverted images. When his *keitai* is a camera phone or a third-generation multimedia phone, he could be taken for a Peeping Tom, an up-the-skirt photographer, or a stalker. It is the dominant public (women, children) who decides whether that anonymous body on the train is an *oyaji*.[37]

Depending on who and what wields the mobile phone, its meaning changes. Fujimoto allows the mobile's meaning to be ascribed not by the father figures or the younger, attractive men, but rather by the women and children. They determine how to interpret the intentions of its holder. This paradise-creating object, in the hands of a young woman, creates impenetrable personal space. But the cute *keitai* transforms a man into a grotesque, perverse, potential threat. This demonstrates the subversiveness of *kawaii* ("cute" in Japanese), the ubiquitous cuteness in Japan that renders nasty messages sweet. When used in the right hands, it serves as a tactic that turns sweet things nasty. In turn, this generates space for the holder of the mobile phone.

Japan's cultural context is particular. Its visual language and rules and conventions surrounding conversation cannot be lightly applied to other contexts. Nonetheless, the *kogyaru* who generate their own territory provide other cues to how women might continue to jam their own urban space. Doing so takes place at the level of the action and tactic, the ways in which someone uses the object. This next section will examine the intersection of time and coordination, social roles, and urban movement through the mobile phone.

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[37] Ibid., 97.

Fluid time, approximeeting, favor sharing

Mobile phones have an impact on people and time. They shift the way people plan appointments, from fixed coordination ("I'll meet you at 5") to progressive coordination ("I'll call you when I'm done with work, and we'll determine where to meet at that time"). This continual checking-in has several names. Plant refers to it as "approximeeting,"[38] Ling and Yttri call it "micro-coordination,"[39] and Michael Kieslinger names it "fluid time."[40]

Micro-coordination precedes what Ling and Yttri refer to this as "hyper-coordination, [which is] not simply the use of the device to coordinate activities. It involves social and emotional interaction and it includes strictures as to the type of terminal one should use and the way in which they should use it."[41] Teenagers, for example, use hyper-coordination as a way to ensure that group norms are followed. Parents and children might use hyper-coordination to express their states of mind and well being when they are on the go. Together, micro- and hyper-coordination form a complex dance of affirmation of social roles in a group (whether family or friends), and organization of events across different communication platforms, such as email, instant messaging, mobile phone, and land line. For women in urban environments, they represent the reality of juggling many quotidian, personal and emotional commitments. The complexities of these interactions can be grouped into five considerations: people and roles, communication tools, event type, location and transportation, and emotional and soft factors.[42]

In 2004, I conducted an ethnographic study of social roles and fluid timing in a group of San Francisco women.[43] Ranging in age from 28-32, the women would get together monthly on the full moon for dinner and assorted mischief. The core group was comprised of six single women, but the group expanded to 15 for bigger events. All but one woman was single; most did not have serious boyfriends at the time of the study. Delia served as the group leader.

The planning details of these events revealed much about the group's power dynamics. For example, Anna planned a night of dinner and dancing. The day of the event was rainy and cold. Delia used instant messaging on the computer to individually convince the other women to lobby Anna for a change in venue, closer to Delia's neighborhood. This was not only because of the weather: Anna and Delia had argued recently, and through this interaction, Delia

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[38] Plant, "On the Mobile. The Effect of Mobile Telephones on Social and Individual Life.," 61.
[39] Ling and Yttri, "Hyper-Coordination Via Mobile Phones in Norway," 5.
[40] Michael Kieslinger and Molly Steenson, "Fluid Time: Timing Tools for Social Networks" (paper presented at the O'Reilly Emerging Technology Conference, San Diego, CA, 2004).
[41] Ling and Yttri, 3.
[42] Kieslinger and Steenson, "Fluid Time: Timing Tools for Social Networks".
[43] For the Fluid Time case study, I attended two group events, interviewed five women, asked three women to keep a timing and event planning diary, created individual personas, developed a group persona, and probed two scenarios for minute detail. The results were presented at the 2004 O'Reilly Emerging Technology Conference. Michael Kieslinger defined "fluid time."

reestablished her dominance.[44] For as much as this might have looked like micro-coordination on the surface, a more intricate dance of hyper-coordination was at play.

Timing and coordination tools can also be applied in other ways. Jennifer Bove and Andreea Chelaru, as students at the Interaction Design Institute Ivrea in Ivrea, Italy, designed a system to facilitate the needs of working mothers. Their interviews and ethnographic research indicated that mothers especially needed something to fill in the gaps of a routine, when something was forgotten or running late. To that end, they designed Favor Link,[45] a mobile phone service that allows its users to request favors of a trusted network of friends. It is location-aware, meaning it knows where the user and her friends are, and can save a place-based bookmarks (e.g., the grocery store does not need to be entered every time). For example, a cooking parent could ask a friend to pick up a forgotten ingredient, if he sees she is near the grocery store.

Favor Link doesn't ask strangers to do favors, but rather people within a web of trust. It works on the notion of social capital, in which individuals and groups in a social unit exchange goodwill as their currency. Tools like Favor Link need to provide transparency and the opportunity to opt out in order for them to be safe for their users. Similar location-aware services, such as Dodgeball and ImaHima, offer both soft (do not broadcast to my ex-boyfriend) and hard (blocking, anti-stalking, removal) measures for users to not broadcast their locations to other users.[46] Social capital is a key component of urban, mobile technology projects in the developing world. The last examples of this paper will look at this mechanism as a way to build business and revenue opportunities for women and marginalized people in developing countries.

Social capital and micro-entrepreneurs

Figure 8: A Ugandan woman shows off her new villagePhone store. (Source: DOT-COM Alliance)

Mobile phones are not a panacea. But the mobile does profoundly shift our relationships to space and information and communication possibilities. It reinforces our existing social networks and intimate relationships. In turn, it offers new opportunities for women to actualize and operate within urban space. Most promisingly, mobile technology opens up economic prospects in the developing world, creating new revenue streams for women and marginalized people.

[44] Kieslinger and Steenson, "Fluid Time: Timing Tools for Social Networks".
[45] Jennifer Bove and Andreea Chelaru. *Favor Link*. http://people.interaction-ivrea.it/a.chelaru/FLconcept.htm, accessed April 1, 2006.
[46] Dan Mellinger, "Privacy's Role in Mobile Social Software for the Urban Community" (paper presented at the Ubicomp 2004, Nottingham, UK, 2004), 46.

Mobile phones are relatively inexpensive (often, development organizations distribute mobile phones or fund micro-loans), and are functionally simple enough that they do not require literacy. Such mobile technologies have a leapfrogging effect. Rather than following the United States model, where landlines proliferated before mobile adoption began, the country using them essentially skips over landline tele-communications and enters a mobile paradigm.

Africa represents the fastest growing mobile market, with a 1000% increase in mobile subscribers from 1998–2003.[47] Though mobile penetration is not as high as other regions of the world, the proper consideration might instead be access to a mobile phone. Such is the case in countries like Uganda, where 4% of the population owns a mobile phone, but 80% can access one.[48] Many African nations see women as the heavier mobile users, both among owners and sharers, as is typically the case in the rest of the world.[49]

The Grameen Foundation supports micro-entrepreneurship projects in Bangladesh, Botswana, India, South Africa, Thailand, and Uganda. In Uganda, it partnered with a number of micro-finance organizations and Mobile Telephone Network (MTN) Uganda to create MTN villagePhone. With micro-loans, women buy village phone startup kits, which provide a mobile phone, SIM card, prepaid airtime card, business cards, advertising sign showing rates, and a car battery or solar panel connection for electricity.[50] These become open mobile telecenters where people can come to place a telephone call. Phone clients place calls for a number of purposes: conducting business, communicating with family, participating on radio shows, and checking agriculture prices.[51]

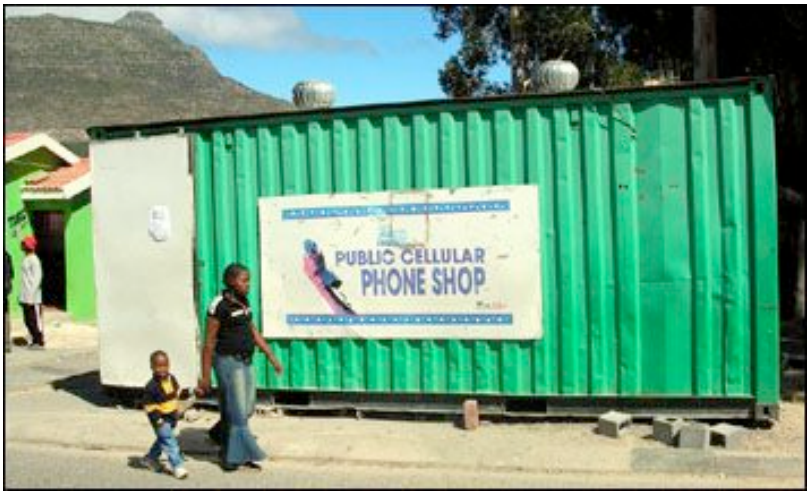

Figure 9: A public phone shop in South Africa. Note its construction (shack or discarded shipping container). (Source: Flickr).

In Chennai, India, the Foundation of Occupational Development (FOOD) started the Inter-City Marketing Network project in April 2001.[52] A micro-entrepreneurship program, it provided mobile phones to poor artisan women so they could better exchange goods and expand

[47] Coyle, "Overview," 5.
[48] Ibid., 6.
[49] Ibid., 47.
[50] DOT-COMment, "Using Cellular Phones in Uganda for Rural Income Generation and More," (<http://www.dot-com-alliance.org/newsletter/article.php?article_id=36>).
[51] "Villagephone Project in Uganda," in *M-Internet360: Mobile Internet/WiFi business models and technologies* (2004).
[52] Loyola Joseph, "Inter-City Marketing Network for Women Micro-Entrepreneurs Using Cell Phone: Social Capital Brings Economic Development," (<http://www.i4donline.net/feb05/intercity_full.asp>).

their business networks. The artisans sold their goods locally, but found marketing their wares to a larger audience difficult. Typically, they needed to go through a middleman in order to expand their reach. The women were encouraged to use the values of social capital, fostering relationships to build a customer network. They use mobile phones to organize product distribution and trading sessions. As a result, their profit margins and sales increased, their marketing reached new urban areas. Active members earned a USD $10–$40 profit, which represents 10–15% of the total family income and pays for such expenditures as school fees. The mobile phone served as an enabler for social networking, and at that, a profitable one. More than 300 groups now take part in the network.

Producing mobile space: a theoretical scaffold

(Social) space is a (social) product.[53]—Henri Lefebvre

Current research and writing on mobile phone use tends to be ethnographic in focus, concentrating on user behavior in practice. Academically, it draws from sociology, anthropology, and human-computer interaction, in addition to communications and computer science. Its research institutions are not just academic, but corporate: Intel Research, Microsoft Research, Nokia, Telenor and Vodafone, to name a few, foster and publish research. The extended body of research extends to broader, sociological investigations of mobility, such as the Center for Mobilities Research at Lancaster University, directed by John Urry.

In order to discuss mobility from an architecturally spatial perspective, the theoretical and spatial frameworks of Henri Lefebvre, Michel de Certeau and Bruno Latour provide an underpinning. Sociologist Henri Lefebvre wrote *The Production of Space* in 1974, which was translated into English in 1991. Michel de Certeau's *The Practice of Everyday Life* appeared in French the same year as Lefebvre's volume; it was translated into English in 1984. Bruno Latour's *We Have Never Been Modern* was published in 1991, the same year as *Production of Space* was first translated into English.

For Lefebvre and de Certeau, space is neither uniform nor absolute. It is active, social, and characterized by its practice (for de Certeau) and its modes of production (for Lefebvre). This social space encompasses both the mental and the physical, and is more easily illustrated by what it is not. Lefebvre envisions "such a social space is constituted neither by a collection of things or an aggregate of (sensory) data, nor by a void packed like a parcel with various contents, and that it is irreducible to a 'form' imposed upon phenomena, upon things, upon physical materiality."[54]

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[53] Henri Lefebvre, *The Production of Space* (Oxford, UK: Blackwell Publishing, 1991), 26.
[54] Ibid., 26-7.

Social space is supported by three concepts: spatial practice, representation of space, and representational spaces.[55] The first concept, spatial practice, as the realm of production, is the system that produces social space. This is not an abstract mechanism, but rather one that "embodies a close association, within perceived space, between daily reality (daily routine) and urban reality (the routes and networks which link up the places set aside for work, 'private' life and leisure).[56] The elements of spatial practice may seem paradoxical, Lefebvre says, but represent the complex interweavings an urban resident experiences in the course of a day, for example, the network of roadways and airways, mail delivery and commuting. For its purposes within a mobile technology space, this is where we locate the overarching rules of engagement. To name a few examples, spatial practice includes the topology of satellites, cell towers, mobile service providers like T-Mobile, Verizon and Vodafone; the supply chain of mobile handset development; the particularities of mobile phone payment plans and prepaid cards; the funding of micro-capital and microloans in the developing world; and the flows of capital between service providers, electronics retailers, and mobile application developers.

The second concept in Lefebvre's triad is the representation of space. This dominant space is the position of knowledge, signs, and codes,[57] of "conceptualized space, the space of scientists, planners, urbanists, technocratic subdividers and social engineers, as of a certain type of artist with a scientific bent—all of whom identify what is lived and what is perceived with what is conceived."[58] These spaces are abstract "but they also play a part in social and political practice,"[59] and will eventually be broken up by the inconsistencies of the governing rules of spatial practice.[60] Operating in this field are the urban planners who work on cell tower placement, the product managers at the mobile service providers, the designers of the devices and the user experience, all of whom create mutable representations of space are mutable—rules and ideas may be set forth only to shift again. Its rules are different than the third concept in the triad, representational space.

Representational space is that of the symbolic, artistic, and clandestine.[61] It is a non-verbal overlay on physical space and need be neither consistent nor cohesive. Lefebvre considers this "…the space lived through symbols, the space of 'inhabitants' and 'users', but also of some artists and … a few writers and philosophers, who describe and aspire to do no more than describe."[62] On one hand, it is passive; on the other hand, it offers an interstitial vector of action for its inhabitants. For the purposes of this paper, much of the interpretative behavior and

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[55] Ibid., 33.
[56] Ibid., 38.
[57] Ibid., 33.
[58] Ibid., 38.
[59] Ibid., 41.
[60] Ibid.
[61] Ibid., 33.
[62] Ibid., 39.

creativity in the mobile space takes place in this representational layer. "Representational space is alive: it speaks. It has an affective kernel or centre: Ego, bed, bedroom, dwelling, house; or: square, church, graveyard. It embraces the loci of passion, of action and of lived situations, and thus immediately implies time."[63] It is within representational space that plans generated by spatial practice and representations of space can be subverted or hacked. This is could also be the ludic space where play can take place.

Lefebvre's three concepts for types of social space could be broken down into the concretizing production machine, knowledge and planning, and abstraction and representation. De Certeau's concepts of strategy and tactics in the spatial practice examine the means to operate within spaces, places and their boundaries. He defines space as a practiced place,[64] and place as the hierarchy setting entity, "an instantaneous configuration of positions"[65] that "implies an indication of stability."[66] Within the exigencies of place and space, strategy and tactics calculate their positions. Strategy and place occupy power positions. Strategy is the:

> calculation (or manipulation) of power relationships that becomes possible as soon as a subject with will and power (a business, an army, a city, a scientific institution) can be isolated. It postulates a *place* that can be delimited as its *own* and serve as the base from which relations with an *exteriority* composed of targets or threats (customers or competitors, enemies, the country surrounding the city, objectives and objects of research, etc.) can be managed. As in management, every 'strategic' rationalization seeks first of all to distinguish its 'own' place, that is, the place of its own power and will, from an 'environment.'[67]

In contrast to strategy, "the space of a tactic is the space of the other,"[68] de Certeau writes. The tactic plays in juxtaposition to strategy. It is "a calculated action determined by the absence of a proper locus. No delimitation of an exteriority, then, provides it with the condition necessary for autonomy. Strategy governs a place of its own, managing its exterior threats.[69] Since the tactic operates outside its own space, it must be opportunistic, seeking its own advantages in the interstices. It cannot see. "Power is bound by its very visibility," de Certeau says, but "trickery is possible for the weak."[70] By pulling the wool over the eyes of the dominant power (*la perruque)*[71], the tactic uses the space and resources of the strategic in order to make its moves.

In mobility, the tactic claims space by doing what the strategy does not expect. Tactics are the space of the hacker or signal jammer. They also exist in the realm of teens, using a

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[63] Ibid., 42.
[64] Michel De Certeau, *The Practice of Everyday Life* (Berkeley, CA: University of California Press, 1984), 117.
[65] Ibid.
[66] Ibid.
[67] Ibid., 35-6.
[68] Ibid., 37.
[69] Ibid.
[70] Ibid.
[71] Ibid., 29.

mobile phone to claim urban space typically ruled by men, as in Kenichi Fujimoto's characterization of the mobile phone as a territory-generating apparatus. Urban games facilitated by mobile technology, such as Elizabeth Goodman and Michele Cheng's Digital Street Game, or those by area/code's Frank Lantz and Kevin Slavin, also tease the notion of strategy versus tactics. But also, the mobile phone represents a tactic for women in Chennai, India: with information about the price of goods, they can cut out the middleman and his strategic space.

All of the spaces with their attendant modes and operations outlined by Lefebvre and de Certeau have always existed in capitalism. Mobile technology in particular calls attention to these hybrid spaces it organizes. It is an additional overlay of a set of spatial practices, representations of space and spatial representations, particularly in the ways it allows its users to be in multiple places at the same time. This challenges de Certeau's ordering notion of place, in which everything occupies its right place in the hierarchy and shares place with nothing else. Bruno Latour indicates the problems with this mix of here and there, global and local. He writes, "as concepts, 'local' and 'global' work well for surfaces and geometry, but very badly for networks and topology."[72] Universal thought no longer is a hovering spirit but a networked entity. He continues:

> Reason today has more in common with a cable television network than with Platonic ideas. It thus becomes much less difficult than it was in the past to see our laws and our constants, our demonstrations and our theorems, as stabilized objects that circulate widely, to be sure, but remain within well-laid-out metrological networks from which they are incapable of exiting—except through branchings, subscriptions and decodings.[73]

Like de Certeau and Lefebvre, who see spaces that may overlay each other or operate in opposition to one another, Latour sees hybrids. *We Have Never Been Modern* was published in French in 1991 and translated into English in 1993. Perhaps in the 20 years after Lefebvre and de Certeau, it became possible to celebrate the hybrid? Already, Latour's work cites Donna Haraway's 1991 "A Cyborg Manifeso:" hybrid objects and spaces had a precedent. Created of a mix of science and nature, Latour's model of never-have-been-modernity incorporates the moderns' long networks and separation between objective nature and free society; the premodern non-separability of things and signs and multiplication of nonhumans; the postmodern multiple times and reflexivity.[74]

Approaching this representation of the hybrid requires new an old form: the Parliament of Things, where hybrids our ratified in plain view. "My hypothesis … is that we are going to have to slow down, reorient and regulate the proliferation of monsters by representing their existence officially. Will a different democracy become necessary? A democracy extended to things?"[75]

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[72] Bruno Latour, *We Have Never Been Modern* (Cambridge, Mass.: Harvard University Press, 1993), 119.
[73] Ibid.
[74] Ibid., 135.
[75] Ibid., 12.

Latour's Parliament of Things is a request for representation in social space, as Lefebvre describes it—only he refers to assemblies:

> The form of social space is encounter, assembly, simultaneity. But what assembles, or what is assembled? The answer is: everything that there is *in space*, everything that is produced either by nature or by society, either through their co-operation or through their conflicts. Everything: living beings, things, objects, works, sings and symbols."[76]

The character of mobile space

Mobile space reflects an assembly, a hybrid of multiple types of social space. These social spaces, though combinations and juxtapositions, reflect the notion of a true space,[77] a "unitary theory"[78] uniting the physical, the mental, and the social. (Note that these are the same fields Félix Guattari names in his ecosophy in *The Three Ecologies*: "a nascent subjectivity, a constantly mutating *socius*, and an environment in the process of being reinvented."[79]) True space is governed by universals, which Lefebvre believes exist.[80] The "*act of producing,*"[81] too, is a universal (which in turn gives rise to the different representational concepts of space that he describes).

This may bring us back to a characterization of mobile social space. Writes Lefebvre, "To speak of 'producing space' sounds bizarre, so great is the sway still held by the idea that empty space is prior to whatever ends up filling it. Questions immediately arise here: what space? And what does it mean to speak of 'producing space'?"[82]

As with many technologies, it is tempting to say that the nature of the space it produces is somehow different from that of other, past spaces. In reality, there are past precedents, whether in description of social space, Latour's networks and Constitution, in strategy and tactics. But for this project, it opens up other questions. Does the personality-expressing, place-breaking nature of mobile technology call for a reframing, or does it find its description within our current conceptions? What are the maps of these topologies? If mobile technology shifts power to women and the developing world, how does this affect social space—is it a mere shifting of modes of production, something that changes strategies and tactics, or another ludic area of representational space? What is a mobile, social space?

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[76] Lefebvre, *The Production of Space*, 101.
[77] Ibid., 10.
[78] Ibid., 11.
[79] Félix Guattari, *The Three Ecologies*, English ed. (London ; New Brunswick, N.J.: Athlone Press, 2000), 68.
[80] Lefebvre, *The Production of Space*, 15.
[81] Ibid.
[82] Ibid., 16.

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