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Thinking
in Telepathic Cities

[I]t should be clear that telepathy is historically linked to numerous other tele-phenomena: it is part of the establishment of tele-culture in general. It is necessarily related to other nineteenth-century forms of communication from a distance through new and often invisible channels, including the railway, telegraphy, photography, the telephone and the gramophone. It is this part of a culture which is still in the process of being articulated, and in this respect perhaps the question "Do you believe in telepathy?" need not be regarded as categorically or essentially distinguishable from questions such as "Do you believe in the telephone?" or "Do you believe in television?" [1]

The Urban Context for Telecommunications

Throughout history, cities have evolved symbiotically with communication technologies, both physically and socially.

Physically, communications enabled fundamental restructurings in spatial relationships in the city. Writing, mechanical printing, and electronic telecommunications (from the telegraph to packet-switched networks) all drove shifts in the location of activities in sometimes remarkably complex and subtle ways. For instance, the telephone permitted the large-scale centralization of office work in cities, separated from factory production. But it also made the skyscraper feasible, by reducing the amount of inter-office mail in large organizations. Without the telephone for floor-to-floor communications, most of the floor area of large buildings would be needed for elevators carrying messengers.[2]

Socially, shifts in communications technology have been accompanied by shifts in the mechanisms by which thought and desire are translated into language and action. Communications technology has become a fundamental medium in brokering the relationship between minds, augmenting our natural capabilities of speech and gesture. For instance, with the development of writing, societies no longer were required to retain their

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[1] Nicholas Royle, *Telepathy and Literature: Essays on the Reading Mind*, Cambridge, MA: Blackwell, 1990, p. 5.

[2] Jean Gottman, "Why the Skyscraper?", *Geographical Review*, vol. 56, no. 2 (Apr. 1966), pp. 190–212.

entire culture in memory, and non-oral relationships emerged, such as the author–reader one. By allowing culture to be archived, writing also fostered the emergence of new group relationships beyond the clan or tribe: city and civilization. Mumford clearly argues that writing and urban societies were more or less simultaneous, symbiotic historical developments.[3] Likewise, in the early 20th century, mass political movements pioneered the use of radio to manipulate the lines between individual and group identity. In the post-war era, the advertising industry has exploited psychoanalytic theories of the mind to influence how consumers perceive relationships between self, society and the material world.[4]

Today, urban communications technology is again in a period of massive disruption. Yet while historical generalizations are plausible in hindsight, they don't offer much in the way of tools for thinking about how the next transformation may play out. A central challenge to forecasting in this area is the simultaneous occurrence of change on both physical and social fronts. All too often, the recent literature focuses on one issue or the other, without adequate context or connecting hypotheses. But bringing together these two perspectives is critical because they are so densely intertwined.

In this chapter, therefore, I advance that mobility is one conceptual frame which offers a more integrated approach to understanding urban telecommunications. The urban studies literature has recently been dominated by a single over-arching theme: the rapid and near-total urbanization of the planet's population.[5] Yet, behind this story of mass fabrication of physical stuff (roads, buildings, slums, etc.) is a larger meta-narrative of extreme mobility. Particularly in the developing world, urbanization is bringing many kinds of mobility to new populations: financial mobility through micro-lending and remittances, residential mobility through migration, and physical mobility through motorization. However, the current urban telecommunications revolution is characterized by a broad-based grassroots response to this destabilization.

The dominant mode of communications that underpins these emerging civilizations of extreme mobility is the mobile phone in its many variants. Individuals and small groups are pioneering a set of new communication practices that leverage mobile communications to manage new

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[3] Lewis Mumford, *The City in History: Its Origins, Its Transformations, and Its Prospects*, New York: Harcourt, Brace & World, 1961.

[4] *The Century of the Self*, British Broadcasting Corporation, TV documentary.

[5] *State of the World's Cities 2006/7*, United Nations Human Settlement Programme, New York, 2006.

lifestyles played out in new places. Yet while social observers have begun to map this shift, we know very little about the philosophical implications of these new modes of living. And so, as Nyíri asked, "With the word processor becoming our writing instrument, what changes do there occur, if any, in the ways and content of our thinking?"[6] While this chapter will, by necessity, address questions of social relations, for the purposes of philosophical argument I am primarily interested in how emerging technologies and practices of mobile communication are changing the way we think about ourselves, our relationships with other individuals and groups, and the physical world. What can we learn by posing Nyíri's basic question in this new sociotechnical context?

To begin the present discussion, I re-purpose the term "telepathic communication" as a rhetorical tool. By telepathic communication I mean the current and future set of personal mobile communications devices, services and infrastructure – from simple mobile phones to immersive, shared augmented reality.[7] As one of the leading legitimate scientific investigators of psychic phenomena described it:

> We venture to introduce the words Telesthesia and Telepathy to cover all cases of impression received at a distance without the normal operation of the recognised sense organs. These general terms may, we think, be found of permanent service.[8]

"Of permanent service", indeed. The adoption of this term is intended to focus our attention on the cognitive and sensory nature of mobile communications over the purely functional, social aspects. That is, by employing this term, I seek to emphasize the nature of mobile communications as an extension of the self, rather than exclusively a media for social communication.

The remainder of this chapter develops the concept of telepathic communication, first by examining its relationship with evolving notions of the self, and second through the mechanism by which it may impact social relationships. By nature, this discussion is highly speculative. Rath-

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[6] Kristóf Nyíri, "Thinking with a Word Processor", in R. Casati (ed.), *Philosophy and the Cognitive Sciences*, Vienna: Hölder-Pichler-Tempsky, 1994, pp. 63–74, cf. http://www.hunfi.hu/nyiri/KRB93_TLK.htm.

[7] M. Haller, M. Billinghurst and B. Thomas (eds.), *Emerging Technologies of Augmented Reality: Interfaces and Design*, Hershey, PA: Idea Group Publishing, 2006.

[8] F. W. H. Myers addressing the *Society for Psychical Research*, London, December 1882, quoted in Royle, *op. cit.*, p. 2.

er than provide an authoritative survey of relevant literature, the goal here is to overview the historical basis for borrowing this metaphor, and lay out a set of ideas and questions that can guide and inspire further investigation.

The Telepathic Self

The notion that human beings are able to communicate by direct transference of thoughts or emotions has deep roots in mythology, and is a recurrent theme in Western literature, as Royle's excellent treatise on the subject documents. While the details vary, most ancient mythological traditions contain at least one, and usually many, descriptions of telepathic capabilities in both deities and mortals. It could be argued that telepathy is second only to immortality as a mythological aspiration of human civilizations. The first recorded use of the term *telepathy* was in 1882 by the classical scholar Frederic W. H. Myers. The term is derived from the Greek *tele* (remote) and *patheia* (to be affected by).[9]

The development of electromagnetic theory in the 19th century spurred many scientific investigations of telepathy. Armed with new tools for understanding the physical world, Myers and other prominent British scientists speculated that the brain possessed innate electromagnetic capabilities. Though he eventually became disillusioned with telepathy, chemist and physicist Sir William Crookes (whose work would become instrumental in the development of wireless communication) actively conducted telepathic experiments. At a meeting of the British Association many years later, he explained his youthful curiosity – essentially hypothesizing that neurological analogues of recently invented radio receiving circuitry might be found in the brain:

> It is supposed by some physiologists that the essential cells of nerves do not actually touch, but are separated by a narrow gap which widens in sleep while it narrows almost to extinction during mental activity. This condition is so singularly like that of a Branly or Lodge coherer[10] as to suggest a further analogy. The structure of nerve and brain being similar, it is conceivable there may be present masses of such nerve coherers in the brain whose special function it may be to receive impulses brought from with-

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[9] "Historical Terms Glossary", Parapsychological Association, http://www.parapsych.org/historical_terms.html.

[10] A device that was the core of early radio receiving apparatuses used in wireless telegraphy.

out through the connecting sequence of ether waves of appropriate order of magnitude. Roentgen has familiarized us with an order of vibrations of extreme minuteness compared with the smallest wave with which we have otherwise been acquainted, and of dimensions comparable with the distances between the centers of the atoms of which the material universe is built up: and there is no reason to suppose that we have here reached the limit of frequency. It is known that the action of thought is accompanied by certain molecular movements in the brain, and here we have physical vibrations capable from their extreme minuteness of acting direct on individual molecules, while their rapidity approaches that of the internal and external movements of the atoms themselves.[11]

Today, while the brain's ability to *create* electromagnetic radiation is widely discredited, there is still considerable interest and uncertainty surrounding brain tissue's ability to absorb it – this controversy lies at the center of public debates over health risks of mobile phone use. Even by today's standards, Crookes' logic was sound.

Crookes was not the only legitimate scientist who dabbled in the paranormal variations of the physical electromagnetic phenomena that intrigued them. As Pang writes, revolutions in engineering have historically laid the groundwork for later scientific revolutions. "Late medieval and early Renaissance advances in engineering, geography, art, and instrumentation undercut scientific theories that had been in place for millennia and forced scientists to develop a new understanding of everything from the physics of machines, to the structure of the earth, to the workings of the cosmos."[12] Yet then, as now, this mismatch in capability and theory has been profoundly disorienting. "The emergence of 'telepathy' is linked to the crisis of Christianity in the Victorian age. As Janet Oppenheim observes in her excellent book *The Other World: Spiritualism and Psychical Research in England, 1850-1914:* 'In an effort to counter [their] insecurity, to calm their fears, and to seek answers where contemporary churches were ambiguous, thousands of British men and women in the Victorian and Edwardian eras turned to spiritualism and psychical research.'"[13]

Indeed, the lives of early telecom pioneers paint a picture of alchemists and conjurers spiritually engaged in a search for meaning and reason in

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[11] "Sir William Crookes Addresses the British Association", http://www.survivalafterdeath.org/books/crookes/researches/address.htm.

[12] A. S. Pang, "Science: The Next Revolution?", SR-1064: *Ten Year Forecast Perspectives*, Palo Alto, CA: Institute for the Future, 2007.

[13] Royle, *op. cit.*, p. 3.

the poorly understood physical phenomena they were harnessing for their creations:

> Psychical communications were not secondary or degraded analogies weakly propped on proper science. Inventors and technologists often initiated investigations inspired by the promise of rendering "supernatural" means of communication mechanically possible. Alexander Graham Bell's workshop was dedicated to inventing machines for visible speech, but Avita Ronell suggests that Bell, a seance-goer after a number of familial deaths, was also working through a pact to communicate with his brothers. The first words heard on Bell's line were addressed to Thomas Watson, Bell's assistant, who was also a medium. After a dreamy childhood and attendance at spirit circles, Watson moved into a career in that "occult force, electricity", since "I felt sure that spirits could not scare an electrician and they might be of some use to him in his work". Watson listened to the electrical interferences on the "dead" telephone line, convinced, as were many others, of their intelligent origin. … Cromwell Varley, pioneer transatlantic telegraphist … tracked psychical messages from his mediumistic wife running parallel to the wire. … McClure's *Magazine* carried a series of articles under the general heading of "On the Edge of the Future". The June 1893 issue ... also reported that Nikola Tesla was similarly investigating the transmission of thought by ether amongst his more speculative enquiries.[14]

Nearly a century later, during the Cold War, experiments in telepathy were revived by scientists and engineers at places like the Institute for the Future in Palo Alto, California.[15]

This cursory review of the history of telepathy indicates both the deep roots and aspirations of telepathy and the recurrent scientific interest in its plausibility. Yet today, the interest in telepathy is not in verifying its existence, or understanding its physiological or supernatural mechanisms, but rather in replicating its functionality through engineering. While perhaps long implicit, technology evangelists have recently begun to explicitly articulate this goal. As a 1999 interview with a senior strategist at Nokia described:

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[14] R. Luckhurst, *The Invention of Telepathy, 1870–1901*, Oxford: Oxford University Press, 2002, pp. 135–138.

[15] This fact first became public when on January 18, 2008, Jacques Vallee gave his lecture "Parapsychology at the Institute for the Future: Now It Can Be Told" at the Institute for the Future, Palo Alto, California.

> Linturi speculates that within 20 years, we will have wireless communicators embedded in our throats and ears, allowing subvocalized thoughts to be transmitted to our friends and colleagues anywhere in the world. Then, he concludes, engineers would finally have invented practical telepathy.[16]

In this sense, modern mobile voice communications can be seen as the outcome of a social process of technology development. We aspired to telepathy, and invested in the efforts that would lead to its development. In this view, it shouldn't surprise us that telecommunications technology is soon likely to emulate mythological descriptions of telepathy. Already, the design trends in many new communications services have decidedly shifted from episodic exchanges to persistent connections and "presence streams".[17]

Given that extensions of human capabilities similar to what used to be called telepathy are emerging as a result of human choices, a larger question emerges. What is driving the quest for telepathy? Why do we want it? The question can be approached from two perspectives: a functional socioeconomic one, and a cognitive/psychological one.

First, as I argued in the introduction, these capabilities are emerging at a time of rapid urbanization and increasing mobility. How much the rise of telepathy is a driver of or a response to this context is not an unimportant, or immediately answerable question. But the notion that individuals seek telepathic capabilities to gain social or economic advantage is certainly attractive. In this sense, telepathy is a path to self-augmentation, economic efficiency, and social advancement.

Yet while telepathic communications clearly has a rational component linked to optimization and efficiency in complex, highly mobilized cities, this is not the only role it plays in shaping the self. The telepathic self is closely linked to intense emotional events, and we see it most evident in times of celebration and crisis. For telepathy likely means the end of solitude during moments of extreme joy or distress.

Research from both perspectives is needed to determine the utility of telepathy as a conceptual framework for advancing a philosophy of telecommunications convergence. Does the technological equivalent of telepathic communication effect consciousness in measurable ways? How

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[16] "Just Say Nokia", *Wired* 7.09, September 1999.

[17] Twitter and Facebook are the two leading contemporary examples of presence streaming practices. Skype is also widely used to create always-on connections between two or more individuals that approximate the instantaneous nature of telepathic communications.

does it affect our ability to develop a theory of mind, or empathic ability? How does it impact our sense of self and identity? How does it shape our perception of the body and its relationship to the material world?

The Social and the Sociopathic Telepath

As telepathic modes of communication become more widespread, they will become a driver of social change. In earlier work, I examined the ways in which telepathic modes of communication used on a large scale in cities could drive the emergence of rapid, unpredictable social and spatial change.[18] Here, let me briefly consider the implications of functional telepathy as a frame for thinking about social relationships in the city. In the previous section, we considered how telepathic capabilities transform the individual mind. At this juncture we are concerned with larger impacts on two scales. First, how does this affect the relationships between individuals and among small groups? Second, how do these changes in small-scale interactions add up to emergent phenomena at the system level?

Returning to the frame of mobility provides a useful lens for thinking about how groups work in a world of telepathic communications. For as mobility increases, and communications tools increase the number of weak social ties, the problem of coordination explodes. In many ways, the existential problem of the mobile telepath is a pre-occupation with how social networks and the physical city can be re-synchronized to satisfy needs and desires that are constantly and collectively re-negotiated. For the social telepath, time is a fungible asset and a raw material.

I would argue that these three trends are driving together to create a new kind of human consciousness in cities, arising from highly mobile, high-choreographed activity networks. For if the 20th century city was defined by the power of synchronized time and physical infrastructure to separate, isolate and coordinate activities – the 21st-century city is characterized by ad hoc synchronization and the boundaries created by virtual infrastructure.

In a sense, we are seeing a complete reversal of two long-standing aspects of urban existence: as the physical city becomes more ephemeral, social networks become more permanent and persistent. Alongside this shift

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[18] See Anthony M. Townsend, "Life in the Real-Time City: Mobile Telephones and Urban Metabolism", *Journal of Urban Technology*, vol. 7, no. 2 (2000), and Anthony M. Townsend, "Mobile Communications in the Twenty-first Century City", in Barry Brown, Nicola Green and Richard Harper (eds.), *Wireless World: Social and Interactional Aspects of the Mobile Age*, London: Springer, 2002.

towards a more information-based, ephemeral physical city, the emergence of telepathic infrastructures is rapidly codifying, embodying and annotating what was once the most ephemeral aspect of urban living – social networks. And thus we're seeing intense internal conflict as telepathic individuals augmented by these new technologies struggle to understand their identity within a world where every social action and relationship is recorded and visible. As internet "philosopher" Jarod Lanier pointed out, the irony is that we are inventing what looks like a new kind of "digital Maoism".[19]

While urbanists have long debated the balance between anonymity and dense social fabric in cities, they in general have agreed that serendipity has played a major role in making urban life interesting, productive and creative. The rise of the social web, telepathically mediated, threatens this vital mixing. One only has to watch young people in cafes to see this in action – whereas even 5 years ago, casual mixing would be the norm for bored people waiting for friends, today they instinctively reach for their mobile devices to stay connected to their social network, rather than exploring new connections in their immediate surroundings. Social software becomes a new kind of intimacy that enables the body to become disconnected from place, or selectively connected. Overall serendipity might be increasing as telepathic networks develop more serendipitous capacities, but these activities are certainly being disengaged from the physical city quite rapidly.

The irony is that as notions of the "public" are eroded, the social bonds of networks are likely to be strongly reinforced. As Royle writes:

> [T]he history of the term *telepathy* is intimately related to that of the concept of *sympathy*... in some ways the historical appearance of *telepathy* could be viewed as the inevitable outcome, or hyperbolization, of the importance accorded to *sympathy* in Romanticism. In the later nineteenth century there is a kind of sliding, whereby the term *telepathy* comes to stand in for what a few years earlier had been designated as *sympathetic clairvoyance*.[20]

Another aspect of this new consciousness is the new, and perhaps most important, role of the physical city, which is to serve as a substrate upon which layers of information and data can be referenced. As Alex Pang points out in his chapter in this volume, unlike the alternate realities of

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[19] Jaron Lanier, "Digital Maoism: The Hazards of the New Online Collectivism" (2006), *Edge: The Third Culture*, http://www.edge.org/3rd_culture/lanier06/lanier06_index.html.

[20] Royle, *op. cit.*, p. 5.

early cyberpunk, what we see emerging today is a complex geographic web of information encoded to real physical places. Increasingly, what and who are physically present in a specific urban location may not be as valuable as historical, cross-referenced, or future information that will be stacked up in the co-present virtual space. We may think about cities as information spaces to be navigated, and browsed more efficiently with our bodies.

Finally, it is worth considering the potential negative social outcomes of telepathic communications. The use of telepathic modes of communications has been repeatedly shown to be a powerful catalyst for political and social change.[21] Recent experiences in South Korea, the Philippines, Spain and the Ukraine showed how widely diffused access to mobile messaging could create new forms of emergent social organization. However, it is worth considering the evidence that telepathic communications could augment the capabilities of sociopathic individuals and groups. To be clear, revolutionaries and reformers have a different view of how societies should be organized – sociopaths abhor society, and lack a sense of moral responsibility or social conscience.

The idea that telepathic communications could empower sociopaths to become more socially networked, and therefore more powerful and disruptive, seems ironic. But the notion that these capabilities could be used to coordinate individuals acting in their own self-interest is well documented, and in fact underlies much of the thinking about digital commons today. Examples are easily found in any city of mobile phones being used for nefarious purposes, but increasingly we are seeing new forms of sociopathic collaboration. Such is for instance in San Francisco the practice of "rat-packing", where criminals use mobile phones to call in fellow assailants to surround a victim.[22] In Rio de Janeiro, the prison riots of 2006 may be the first large-scale telepathic uprising. There, a network of criminals coordinated multiple bombings and riots using mobile phones, effortlessly spanning the boundaries of the prison system. Even more frightening possibilities arise when we consider the rapid advances being made in neural-implant technologies, which stitch together human nervous systems and electronic circuits.[23] While these systems hold enormous therapeutic promise, played out to the extreme they conjure visions of a cybor-

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[21] Howard Rheingold, *Smart Mobs: The Next Social Revolution*, Cambridge, MA: Perseus, 2002.

[22] *Violent Crime in America: 24 Months of Alarming Trends*, Police Executive Research Forum, 2007, http://tinyurl.com/34cowc.

[23] M. P. Gibson, "The Power of Thought", *Technology Review*, March/April 2008, p. 104.

gian Vishnu – an omnipotent being telepathically controlling a robotic universe.

Conclusion

Human civilization is shifting rapidly into an era characterized by near-total urbanization, extreme mobility, and what I call here universal "telepathic communications" capabilities. This chapter has laid out a basic set of terminology, concepts and questions that can guide investigations into how this convergence of trends may reshape the context of human thought. The strength of this frame lies, I believe, in its strong basis in mythological tradition – that most basic map of the human social psyche – and its ability to convey a complex set of ideas about the functionality of personal mobile communications, its impacts on our perception of self, its role in intermediating inter-personal communications, and finally its transformation of physical and temporal geographies. Continued research and debate is needed to refine our collective understanding and use of this term.