Mobile Mementos:
Expanded Archives, Fragmented Access

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Abstract

Personal wireless communication devices such as mobile telephones are regularly presented as enabling technologies with emancipating powers, giving instant and ubiquitous access to people and information resources which would not have been as easily — if at all — available previously. The emphasis is often on reaching harmony and agreement through the exchange of knowledge, and on making progress through the fusion of ideas. What easily becomes 'depresented' in such imagery, however, is that, while an enormous amount of visual, textual and aural data is captured by millions of mobile device users every day, only a small fragment of that data is made available for query on a large scale. My aim in this paper will be to conceptualise this fragmented archive of mobile mementos as a phenomenon that prompts us to reconsider the more traditional meanings of storage and transmission, and to investigate the ways in which new forms of data disclosure (such as geotagging and mobile-augmented reality) are to be understood in relation to popular ideas about omniscience and ever-present data clouds.

Keywords: mobile mementos, expanded archives, fragmented access, mobile augmented reality, geotagging, myths of omniscience

Rethinking cartographic practices

Cartographic practices change. Accurately representing geographical space in a scaled-down version on an often two-dimensional surface, an act that for a long time used to take place within the realm of professional map makers, has in the digital age made way for much more dynamic, non-professional, and ad-hoc approaches to dealing with navigating social, cultural, and physical spheres. As media scholar Sybille Lammes (2008) has argued (and has discussed at MIT's sixth Media in Transition

conference in 2009), digital maps offer their readers or 'users' possibilities to manipulate their appearance and interact with them in novel ways – all within certain limits imposed by underlying programming and protocol designs, of course. Maps and their potentially multiple informational layers are created and discarded along the way, mashed up with each other to form new – sometimes schizophrenic – hybrids, and, with the rising amount of cellphones often equipped with GPS, are not only used as navigational tools but as geographically organised archives of mobile-generated audiovisual tokens as well.

It is because of these changes that traditional ideas of storing, transmitting, and navigating geographical information should be revisited. As media theorist Nanna Verhoeff claimed in her lecture at the 2009 Media in Transition conference, these ideas have so far been largely situated within schools of thought that emphasise practices of representation and classification, and thus within paradigms that stress the possibility to rigidly measure and define space and time coordinates. Such paradigms no longer suffice in today's increasingly heterogeneous and dynamic world of map making and use, Verhoeff argued, and she proposed to shift towards a new way of thinking, one that could be called 'cartography 4D'. With this concept Verhoeff aims at arriving at a non-Newtonian perspective on dimensionality: the fourth dimension is not to be understood as time added to the x, y, and z coordinate axis, but as referring to the act of transcending (or rethinking) traditional dimensional conceptions, of acknowledging 'the need to *conceptualize* as activity'.

In this paper I will take up on this call for a rethinking of cartographic practices by describing how current day uses of mobile wireless communication devices constitute the formation of scattered and heterogeneous data collections, which can subsequently be employed to create and/or populate digital maps. I will do so in three steps. First, in order to explain some of the principal driving forces behind the creation and touting of information-rich and dynamic digital maps, I take an archaeological perspective on idealised ideas of electronic data gathering and describe how these ideas have informed media developments up to and including the Internet. Second, I gauge the role that mobile wireless communication devices play in processes of data gathering by looking at how they make possible practices of geotagging as well as function as interfaces to data collections through mobile augmented reality. Third, I describe several examples of the creation of mobile mementos and their use in digital maps, and in conclusion I show that mobile-generated expanded archives may give us the impression that we have come closer to the ideal of an ever-present data cloud, but that, because of the fragmented accessibility of those archives, this is only so in a potential (and not actual) sense.

A brief archaeology of electronic data gathering in the 20th century

As I have argued elsewhere (Vries 2005), the evolution of information and communication technologies is guided, in non-deterministic yet influential ways, by idealised ideas of an ultimate endpoint, an impossible dream of reaching complete understanding through ever-growing transparency and omniscience. Such myths of sublime communication are never really fulfilled, but they pop up again and again in media history, sometimes as part of legitimizing and commercial strategies, sometimes as part of personal or political longings and laments. With each new medium old promises of making available all knowledge to all people rear their heads, and media developments in the nineteenth and especially twentieth centuries have mostly increased that fever (Davis 1998; Mosco 2004; Bailey 2005).

This is largely because, with the advent of television in the 1920s and 1930s, the ongoing stream of innovations in telecommunications seemed to have accomplished, for the greater part, the age-old dream of being able to hear, speak, and see from great distances. Accelerated by the inception of the electric telegraph, the evolutionary process of media development — which over the decades had continued to engender new knowledge, new technical components, and new receptive environments in which further experimentation could take place — was now poised to extend the three main communicative senses (hearing, speech, and sight) to a global scale. Because audio and visual technologies transmitted live signals, and thus facilitated instantaneous and simultaneous access to people and information, they contributed greatly, in all their various manifestations, to the momentum of myths of unison through improved communication.

As part of this ongoing process, as can be seen in the utopian expectations of radio and television (Douglas 1987; Marvin 1988; Spigel 1992) the positive outlook on the proximity of social unification on a global scale was upheld, motivated by the positivist premise that the more one knows of one's place and language amongst many, the more humble and cooperative one becomes; the 'dream of reestablishing the pre-Babel "great human family"', as Armand Mattelart writes, 'is present throughout the history of the imaginary of communication networks' (Mattelart 2000: 20). In the second quarter of the twentieth century we can therefore point to a heightened expectation that the new electronic media could be used to enhance access to knowledge resources, and improve the exchange of ideas, opinions, signs, and symbols. Among the thinkers that advocated such positivist ideas was the Belgian Paul Otlet, often seen as 'a pioneer both of international organisation and of documentation' who laid the foundations of what we now would call information science (Rayward 1975: 3). An idealist but by no

means an otherworldly dreamer,[1] in 1934 Otlet published his *Traité de documentation* [*Treatise on documentation*], a voluminous work in which he proposed to create a documentation system that would be '1° universal in its scope; 2° reliable and correct; 3° complete; 4° quick; 5° updated; 6° easy to obtain; 7° compiled in advance and ready to be communicated; 8° accessible to a great number of people' (Otlet 1934: 6).[2] Otlet envisioned that interaction with the system would make use of a form of networked teleconferencing, in which new media such as film, the gramophone, radio, and television would provide communication and information to a far better degree than the book could offer. As he noted, these instruments would make us equal in perfectness and fullness as to 'God himself' (ibid.: 431).

Although Otlet's detailed technical description of his system would, even by present-day standards of technological development, make it an unfeasible project,[3] it shows he was very much swayed by the potential of the new 'ubiquitous, universal and eternal' media of his time to help advance humanity towards a 'divine state' of 'being everywhere, seeing everything, hearing everything and knowing everything' (ibid.). He was not alone in harbouring this almost religious drive. The idea that proper education and information dissemination, managed by the newest telecommunication systems, automatically engender a better world, was (and still is) thriving, influencing many thinkers of the time. A similar technology-inspired belief in the need for a permanent world encyclopaedia as Otlet's, for instance, can be found with H. G. Wells, the English utopian social reformer who in 1938 wrote that the creation of a universally accessible and 'complete planetary memory for all mankind' would constitute 'a real intellectual unification of our race' and ultimately 'a way to world peace' (Wells 1938: 86; 88). Around the same time, and unaware of his European contemporaries, American engineer Vannevar Bush valued the importance of improving information management in much the same way. In an article written in 1939, published in 1945, he proposed to build a personal networked microfilm system with which scientists could concurrently store and retrieve documents, and construct

[1] Together with his friend Henri La Fontaine, Otlet was a prominent advocate for the creation of the League of Nations and its educational body The International Commission on Intellectual Cooperation (which later became UNESCO).

[2] All translations from Otlet's originally French work are my own.

[3] Otlet imagined all the world's knowledge to be centrally stored on standardly formatted three-by-five-inch cards. Later he tried using microfilm instead. Attempts to create and maintain a central, universal library, one which he called the Palais Mondial or Mundaneum, were largely unsuccessful due to excessive maintenance needs and an uncooperative government. Also see Rayward (1991).

'associative trails' between those documents (Bush 1945).[4] As he saw it, such a system might even evolve into an all-electric version and directly link to the brain, elevating 'man's spirit' by augmenting his 'limited memory' (ibid.).

We thus see that the assumed unifying power of telecommunication technologies, which had already been touted at the inception of the telegraph and had accompanied many subsequent technological paradigm shifts, remained to shadow and seep through into the consciousness of a diverse field of scholars, writers, scientists, and engineers in the twentieth century. The development of the transistor and of electronic digital computer technology after the Second World War even increased the awareness that linking people and information through new media would be a good, even a necessary thing. This became adamantly clear in the 1960s, when time-sharing systems made it possible for several users to remotely work on the same computer, thus creating a configuration of information management very similar to the one proposed by Otlet. In that period, American computer scientist Joseph Licklider, the director of computer research at the Advanced Research Projects Agency (ARPA) who cited Bush as a great influence on his thinking, wrote a number of illustrious papers in which he proclaimed that computers would become personal devices (Licklider 1960), which would be connected to a galactic resource network (Licklider 1965), and would facilitate the meeting of many interacting minds (Licklider & Taylor 1968).

Licklider, together with his successor at ARPA Robert Taylor, was the fundamental initiating force behind the creation in 1969 of ARPANET, the interconnected science community computer network that was predominantly funded by the American military-industrial complex (Flichy 2007: 41–45). Concurrently, three other computer networks had been constructed (a nameless network at the National Physical Laboratory in England, ALOHANET at the University of Hawaii, and CYCLADES in France), and with a growing number of computers being connected, soon the idea of a network of networks was born. With the development and largescale tests of a set of standardised language protocols (known as TCP/IP, designed by Vinton Cerf and Robert Kahn), this super network, or Internet as it later would be called, became fully operational in 1983. International communication, largely in the form of e-mail, thrived, as did the storage, retrieval, and exchange of information. The visions of Otlet, Wells, Bush, and Licklider were thus for a great part realised, but in a very particular

[4] As another example of how the evolutionary nature of technology development can orient independent experimenters and thinkers towards the same 'good tricks', Bush's design for a microfilm selector was predated by one that was patented and developed by the Russian-born German photography expert Emanuel Goldberg in 1931 (Buckland 1992).

way: because the designers of the system were also the users, there was no need to cater to the wishes of an external market; moreover, because there had been no governing body controlling the direction of development, the technological and communication imaginaries could simply run free, creating the scientific community's ideal (ibid.: 35; 63ff.).

After access to the Internet had become commercialised in the middle of the 1980s, the number of host computers and users grew dramatically.[5] This growth could be observed first among the academic communities, and from the mid-1990s onwards among the general public, with the advent of personal home computers, Internet service providers, and the World Wide Web. The Internet is not the first or only technological platform with which people can cooperate, share electronic information or forge ad-hoc virtual communities,[6] but ever since the start of its exponential growth it has dominated the media agenda, becoming a synonym for the single most effective means to make enlightened progress towards a unified and better world (Mosco 2004: 91). The fact that anyone with a connection could freely participate in the social sphere of cyberspace, for instance, led some early observers to proclaim that the Internet could 'perhaps revitalize citizen-based democracy' (Rheingold 1993: 14), or even create a world in which 'all the sentiments and expressions of humanity, from the debasing to the angelic, are parts of a seamless whole, the global conversation of bits' (Barlow 1996). The physical world was to be enhanced (or, for futurists like Ray Kurzweil (1999), even replaced) by the virtual world, blending atoms and bits into a ubiquitous and information-rich mixture, accessible and manageable on the fly, by anyone, anywhere.[7]

Today, the unifying aspect of the Internet is undoubtedly best and most visibly captured under the heading of 'Web 2.0', a hugely popular metaphor which effectively puts forth the notion that the Web has been improved to a new version. The prevalent conception is that there somehow was an 'old' version of the Web that had its bugs and flaws, and that those bugs and flaws have now been taken care

[5] According to Internet Systems Consortium (ISC), the number of hosts in October 1985 was 1,961. In October 1990 this number had grown to 313,000, in July 1995 to 6,642,000, and in July 2000 to 93,047,785. As of January 2008, a total of 541,677,360 Internet hosts had been counted (ISC 2008).

[6] Grassroots hobbyists' computer networks had already existed since the end of the 1970s in the form of Bulletin Board Systems (BBSs), computers that ran software that could dial into other computer systems using regular phone lines.

[7] See Negroponte's *Being digital* (1995) for a particularly telling account of how atoms and bits are believed to be merging into a single stream of information.

of.[8] The power of the Web 2.0 metaphor is such that it tends to blend the many perceptions of what kinds of improvements have been made into a single idea: despite the fact that the term Web 2.0 is also used to designate a technological shift in how Web pages are now increasingly being built in a dynamic way using pre-stored data (Boomen 2007), what has come to the fore as its dominant meaning is the idea that the Web has now become truly social, and that its users are now participating and collaborating in creative and knowledge-building activities on an unprecedented scale. Notwithstanding the critique that the amassing of personal information for the benefit of creating an all-encompassing web of knowledge can lead to serious privacy intrusions,[9] terms like 'collective intelligence' and 'global brain' keep resurfacing in myths that use the Web 2.0 metaphor, and continue to emphasise that out of intensified cooperation and participation a more democratic and unified world will emerge (O'Reilly 2005).

Cooperate, unify, participate, blend. We can see telecommunication's favourite *memes* at work. The Internet's inherent connotation of *connecting* and *disclosing*, rooted in idealised ideas of communication that over centuries have co-evolved with media technologies, causes well-known glorifications of new media to be reproduced. They tout the coming of the 'Omega Point of perfection', as Vincent Mosco aptly remarks (2004: 75). It is no surprise Mosco here alludes to Teilhard de Chardin's vision of an all-encompassing knowledge singularity,[10] considering that some of the most persistent claims found in discourses of the Internet are that its liberating powers will unlock all available knowledge (Lévy 1997), and bring about the end of distance (Cairncross 1997; Friedman 2005). We can find very similar proclamations when telegraphic, telephonic, radiographic, and televisual technologies were envisioned, developed, advertised, and used. The important thing to note here is not that these claims are far-fetched, but that they are part of a long tradition of regarding new communication technologies as the latest step towards the utopian unification of minds, of combining engineering, regulatory, corporate, and consumer voices in a strategic deployment of utopian discourse.

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[8] The dot-com bubble at the beginning of the 2000s, itself the product of an overhyping of the assumed limitless possibilities of the digital new economy, is often mentioned as a prime example of what was wrong with how the Web was used. See O'Reilly (2005) for an illustration of this type of reasoning.

[9] For a well-founded criticism of Web 2.0 and its reliance on the disclosure of personal information, see 'The externalities of search 2.0: The emerging privacy th reats when the drive for the perfect search engine meets Web 2.0' (Zimmer 2008) and 'Participation inside? User activities between design and appropriation' (Schäfer 2008).

[10] Teilhard de Chardin, considered by some (cf. Wolfe 2004) to be the inspiration for Marshall McLuhan's thinking on the global village, was a Jesuit priest who postulated that there was a direction to evolution that would inevitably culminate in what he called the 'Omega Point', a final unity equivalent to 'the new spirit; the new god' (Teilhard de Chardin 1959: 258).

To be sure, this does not mean that it has always been business as usual, that nothing really changes; on the contrary, especially the Internet and its capacity to remediate other media through the digitisation of media content shows that media have no stable identities, and that their *dispositifs* are continuously changed to suit new telecommunication paradigms. What does not seem to change much, though, is that new media are initially met with high hopes, before they become mundane and create room for the expectation of the 'next best thing'.

Wireless cloud surfing

The project of freeing access to information and knowledge, which, when pressed to its radical ending point, should enable anyone to know anything on whatever topic and to become a member of a completely transparent society, is a familiar utopian outlook, then, and the 'next best thing' of today, represented by mobile communication technology, has sparked renewed belief in necessary fictions that tell of ways to make this outlook a reality. Personal wireless communication devices such as mobile telephones are presented as enabling technologies with emancipating powers, giving instant and ubiquitous access to people and information resources which would not have been as easily — if at all — available in the days before wireless communication technologies. The emphasis in such imagery is often on reaching harmony and agreement through the exchange of knowledge, and on making progress through the fusion of ideas. One key element in maintaining this dream of an ever-present transparent society is that the supporting infrastructure of mobile communication systems is often rendered invisible, as a willful attempt to create and uphold the illusion that the wireless connection is 'just there', to be invoked seamlessly to magically synchronise different space and time co-ordinates.[11] A certain sense of — and need for — telepathic immediacy pervades modern wireless communication technologies: just turn on the mobile device, and a connection will be guaranteed to exist almost instantly.[12]

[11] Telecom operators disguise mobile base stations as large trees in order to conceal them from view, or integrate telecommunications equipment into highly placed infrastructural objects such as bell towers. See Stealth (2008) for some striking examples.

[12] Also see Robison (2003) for the argument that mobile wireless communication terminology is infused with 'the *ideology of telepathy*: an ultimate, implied goal of total convergence between machine, man, knowledge and communication' (Robison 2003: 175, emphasis in original).

And again, new developments seem to push us even further towards ubiquitous connectivity. The possibility to have mobile wireless devices 'know' where they are in geographical space, and thus make them location-aware in their functioning, has in the past few years been quite a noticeable addition to everyday mobile practices. Fuelled not only by the mobile industry's need to create additional streams of revenue, but also by FCC and EU regulatory decisions aimed at aiding rescue workers in accurately responding to emergency calls, GPS-equipped communication devices will quickly become commonplace. The effects of this beefing up of wireless communication technologies, especially in urban areas, promise to be profound. While communication devices such as mobile telephones first transferred mediated conversations from the 'situatedness' of fixed connections to the highly nondescriptive 'anywhere' of media space, their location awareness now re-inserts a spatial variable into our understanding of mobile communication. Suddenly, it does matter again where you are, and not only does this potentially reconstruct earlier conceptions and politics of what it means to be spatially connected, it also incorporates location as yet another type of accessible information into our growing sense of omniscience.

So, a new kind of hybrid urban space emerges, one where, through processes of what could be called 'geotagging' (automatically or manually adding geographical metadata such as coordinates or place names to digital pictures, blog posts, videos, et cetera) additional information layers are linked to physical locations and vice versa. These layers can then be accessed by mobile communication devices through various interfaces, of which the newest create a form of mobile augmented reality (they superimpose visual and textual information on the screen image generated by the device's camera).[13] Thus, a user of a mobile wireless communication device will have been transformed into an even more tightly integrated node in an ever-expanding information network. In such hybrid spaces, more and more information variables will be stored in databases, and, once those databases are accessible through the Internet, become available for immediate query and integration into dynamic maps. The digitisation and 'mobilisation' of location can thus be perceived as adding yet more weight to the persistent idea that wireless communication technologies can (and are expected to) offer us access to any type of information, anytime, anywhere.

It is therefore hardly surprising that location awareness is researched, marketed and adopted as vigorously as it is today. For the mobile industry it presents the opportunity to proclaim renewed hope

[13] See drgoldie (2008) for some examples of mobile augmented reality, developed at the Christian Doppler Laboratory at Graz University of Technology.

in a better, almost utopian future where communication has yet again been improved. In a very familiar display of how idealised ideas of communication come to be expressed in wireless technology discourse, the notion is put forward in press releases and technical papers alike that with location-aware devices a 'qualitative leap' is made in mobile communication, one that will 'deliver relevant, timely, and engaging content and information', and 'can *help reduce confusion*' (Rao & Minakakis 2003: 61, emphasis added). In scenarios of today's communication needs, the modern citizen is portrayed as being in danger of becoming unsettled, either by daunting tsunamis of information or by her lack of knowledge of her immediate surroundings, and, as usual, she is promised that new communication technologies will help solve those problems and make life easier, this time by interacting with her surroundings in all kinds of 'intelligent' ways. The problem-solving characteristics of new location-aware mobile technologies are especially highlighted in Japan's mobile giant NTT DoCoMo's promotional videos, which present us with a 'mobile life in the near future' that is strongly integrated with positioning technologies (NTT DoCoMo 2008). There seems to be no limit to what those interactions might be: proposed applications that make use of added spatial intelligence include the abilities to navigate unknown roads, find nearby friends, locate restaurants or other businesses, receive offers from stores while passing them, play location-based games, walk 'digitally enhanced' touristic routes, and so forth.[14] The only thing that is needed to never get lost again in the myriad of data, or so it appears, is the new, context-sensitive wireless communication device.

So the vision of the future of ubiquitous computing and communication simply takes the 'anytime, anyplace, anyone' mantra of the current mobile communication condition, and radically extends it into 'anytime, anyplace, anything', stretching idealised ideas of communication even more towards their theoretical limits. Today, the dream is to use ubiquitous and pervasive wireless technologies to create an informational cloud, to facilitate access to an ambient intelligence, to expel anxiety over not being able to find, know, or understand someone or something, in other words, to construct a seamless information society where all questions can be answered by, in the words of Neil Gershenfeld, head of MIT's Center for Bits and Atoms, 'embedding the means to solve problems in the things around us' (Gershenfeld 1999: 10).

[14] For a comprehensive taxonomy of location based services, see Ratti et al. (2006: 729–731).

Fragmented archives

But in what shapes does the dream of being engulfed in the informational cloud actually manifest itself today? Let us take a look at some of the ways in which mobile wireless communication devices can create, store, transmit, and share data, and how new cartography practices blur the distinctions between those functions. One very basic practice is to download multimedia files from the mobile device to a PC or laptop. Unless these files are then uploaded to online storage sites, they remain detached from networked databases that can be used to generate informational cartographic layers. So, even though the increase in stored data here implies that from an overall perspective archives expand, these archives are primarily isolated and inaccessible to anyone but the computer's owner. A second practice can be found in the exchange of data between mobile devices, which can take place through the employment of Bluetooth or infrared capabilities. In this case, data multiply on the devices themselves and are therefore accessible to more people than just the original creator of that data. The speed and scale of proliferation is limited to the amount of one-to-one exchanges that take place within a given time span, and as long as the data remain located on the devices they are not easily integrated in public and shared databases. The third practice consists of automatically or manually uploading or streaming mobile-generated material to online storage and sharing sites (such as Flickr, Youtube, Vimeo or Qik) or to social network sites (such as Myspace, Facebook, LinkedIn, or Twitter). Once the uploaded material has been subjected to the website's automatic geotagging software and has been tagged with keywords by users as well, it is transformed into raw data that can potentially be integrated in all kinds of cartographic practices.

This third practice has, especially in the more recent 'Web 2.0' era, generated many applications on the Internet that, in very heterogeneous and dynamic ways, combine digital maps with user-generated data. A prime example is Google Earth, which mixes navigational functionalities with displaying Wikipedia entries, Youtube clips, Flickr pictures, virtual tours of famous landmarks, 3D buildings, et cetera, all geotagged and available for further use in other applications. Google Earth is thus not so much a map as it is a geographically framed collection of annotated environments. Another example is provided by Ushahidi (meaning 'testimony' in Swahili), a website that is dedicated to gathering 'crisis information' – sent in by mobile phone, email, or web forms – and visualizing that information on a map or timeline, all in order to 'create the simplest way of aggregating information from the public for use in crisis response' (Ushahidi 2009). First used after the post-election violence in Kenya at the beginning of 2008, the Ushahidi software aims to monitor events in real-time, thereby transforming digital maps into the actual sites where those events take place and are discussed. A similar emphasis on participatory

cartographic projects can be found on IBM's aptly titled website Many Eyes, where users can upload and appropriate data sets with which they can then generate and share their own infographics. Again, the focus is on using new digital/mobile media and the power of many in order to disclose information to the masses; as the Many Eyes website states,

> [w]e believe that visualizations gain power when multiple people use them to communicate, and that *communication gains power* when multiple people can visualize and explore information together. We want to democratize visualization, enabling anyone on the internet to publish powerful interactive visualizations and start their own data conversations. Many Eyes is designed to bring that power to you. (Many Eyes 2009, emphasis added)

Here we clearly recognise the familiar rhetoric of improvement of communication which is supposed to lead us towards a better understanding of our lifeworld, and, when this line of thinking is radically extended, towards true omniscience. Many of the participatory cartographic projects are expressions of ideologically loaded fantasies of progress,[15] and even when they are primarily geared towards entertainment and commercial applications, such as in the case of Michael Sharon's popular 'social mapping website' Socialight, they cannot escape giving the impression that the marriage between mobile-generated data and cartography is without question the next big step on our way to "strengthen personal bonds that we have with [friends], create new experiences and allow new links to emerge which were previously non-existent" (Sharon 2006). The catch is of course that Socialight and similar websites only work when two conditions are met: first, as with all networked technologies, their user base needs to exceed a critical threshold, and second, those users should not be afraid of disclosing much more information than they are used to, as a transparent society asks for a radical accountability of all its citizens.

Cartographic practices change, indeed, but we should be careful not to misread the speed and direction with which they do. If there is one thing that we can be certain of, it is that many people indeed own and use mobile wireless communication devices, but they do not gather and create audiovisual data in equal amounts or in similar ways, nor do they all add those data to freely accessible databases that can be used to create and distribute informational layers for digital maps. Mobile mementos such as vacation pictures, videos of events, or recorded sounds are first of all stored within the mobile devices

[15] Also see Christian Nold's (2007) *Bio Mapping* project.

themselves, and therefore they constitute at best multiple and largely fragmented archives. The promise that they might become joined together is instrumental in current day developments in media technology, but this will not happen on a large scale unless people start actively making accessible their mobile-generated data. It is therefore the *potential* to upload and interconnect to cartographic data that has stirred renewed interest in attempts to come closer to a state of omniscience, fuelling age-old myths that this endpoint can be reached.

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