

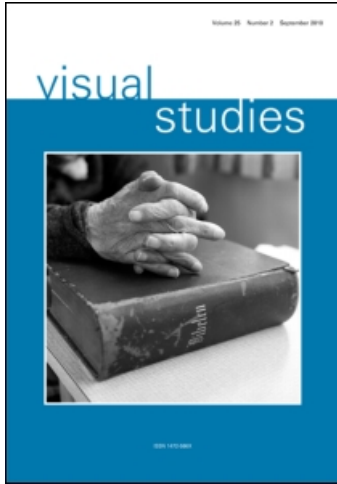
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Geomedia: on location-based media, the changing status of collective image production and the emergence of social navigation systems

FRANCESCO LAPENTA

The increased computational power of portable devices such as smart phones and laptops, and their integration with widely available global positioning systems, are opening the way for a new range of location-based applications that integrate and coordinate users' mediated interactions and data exchanges with other users' live geographical positions. This user-generated information, shared on navigable live virtual maps such as Google Latitude, Foursquare and Gowalla, illustrates the increasing use of location-based applications and the Web to create, assemble and disseminate personal information (in the form of images, sounds and text) to enable shared experiences of individually and socially relevant spaces and events. The new virtual maps, in which this information is visually blurred and merged, represent the emergence of a new paradigm in the visualisation of space. The article elaborates on the fundamental social and perceptual shifts that are being operated today by these new technologies and software applications that the author refers to as geomedia. Geomedia are not new media per se, but platforms that merge existing electronic media + the Internet + location-based technologies (or locative media) + AR (Augmented Reality) technologies in a new mode of digital composite imaging, data association and socially maintained data exchange and communication. In the article the author examines the early adoption of such new geolocation-based technologies and develops a theoretical analysis of the ontological and epistemological shifts that characterise their contemporary evolution, patterns of production and exchange, and the unique form of geolocal digital re-aggregation of which digital images are now a part.

I am here to show you, the reader, my home. I could take many pictures to portray all the rooms and several others to depict the many objects they contain. Or I could take a video and while filming comment on the many rooms and their objects. This first photograph portrays the studio desk and the bookshelf behind it. The second shows the books and my computer

on the same desk. In the video I can pan from a wide angle shot of my studio down to the desk, my books and my computer. There is another alternative, I can take all the pictures I have taken of my house and merge them together in Quicktime VR (1995) or better in Photosynth (2008), and tag each object with comments and personal descriptions (Places iPhoto 2009, Google Earth). Instead of a series of pictures or a fixed sequence of a video showing my house, I now have a navigable virtual photograph of my house. I can pan right, top, down, left in one room (with Quicktime VR), or zoom in on the table, focus on the computer on my desk, pan to the left and move into the living room (with Photosynth). While moving around you can read or hear me describe these rooms and the objects they contain. If not satisfied you can go through the front door and move down the street (Google Street View 2007) or fly high to watch the whole neighbourhood from above (Google Earth 2006, Google Maps 2005, Live Search Maps Microsoft 2005). I could also come and visit your home, office, favourite cafe, movie theatre, restaurant or your actual location (Foursquare, Gowalla 2009). Using the latest location based applications and software (Foursquare.com 2009, Bliin.com 2008), I could point to your location, your city, your street, your home, office or favourite shop or restaurant, and see the images and comments that you posted about them. (Lapenta 2008)

Reminiscent of a technology that Ridley Scott created for Rick Deckard to use in the fictional Los Angeles of 2019 in his film *Blade Runner* (1982), reality can now exceed fantasy in allowing us to seamlessly move from one image into another in a virtual continuum of increasingly global spatial representations of the world. This article elaborates on the fundamental social and perceptual shifts that are being operated today by new software applications that merge existing images, sound and text, creating representations connected to

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users' live geographical position on a virtual map. These technologies, that I call geomedial, are not new media per se, but platforms that merge existing technologies (electronic media + the Internet + location-based and Augmented Reality technologies) in a new mode of digital composite imaging, data association and socially maintained data exchange and communication.

In this article I examine the early adoption of such new geolocation-based technologies and develop a theoretical analysis of the ontological and epistemological shifts that characterise their contemporary evolution, their patterns of production and exchange, and the unique form of geolocal digital re-aggregation of which images are now part. I interpret the geomedial-rendered map as a new social space and organising principle. I suggest that this virtual map is the site of complex and ramified ontological and epistemological shifts that can be initially observed and investigated from at least three interconnected and inseparable perspectives – technological, social and economic – that have the image as their centre of gravity.

The first perspective focuses on the technological, to develop a theoretical understanding of the fusion of digital imaging technologies with fast-developing geolocal technologies. I interpret instances of digital synthesised imaging (photographic mapping) as an example of the changing ontological function of space in the photographic representations of reality. I argue that these technologies reinforce an epistemology that interprets geomedial-based photographic mapping not just as a mere new form of digitally synthesised representation of space, but as a visualisation of the social spaces, identities and social relations and interactions of the users that contribute to its composition.

I next develop this argument to describe how the geomedial-based reorganisation of photographic mapping can be interpreted as paradigmatic of a response to the need to organise the complexity of information flows and mediated interactions. I argue that the virtual map can be interpreted as a new socio-regulatory system adopted by the individual to reduce the complexity of global information flows. Therefore, theoretically I propose that the photographic articulation of space of the virtual map can be understood as a new organisational system – a system based on a regulated virtual representation of space on which geomedial users rely to organise their mediated communications and social interactions in more manageable and contextually relevant information exchanges.

I finally conclude the article with a critical interpretation of these very organisational functions. I argue that while these technological evolutions can be interpreted as a form of social adaptation to the complexities of new technologically enhanced social environments, they can also more problematically be interpreted as the embodiment of a new socio-economic order that exploits geomedial users' increased social production and exchange of information. In this context, images, sounds and texts are interpreted as dominant commodities whose social patterns of production and exchange can be analysed within known socio-economic discourses. In this interpretation the geomedial-based virtual map (and the digitally synthesised images that compose it) are interpreted as a new organisational principle pushed by the same old market forces that led to the progressive global uniformisation of time (and labour) and to the organisation of the production and exchange of material commodities. Geomedial, I suggest, are to space what the watch is to time. They regulate social behaviour and coordinate mediated interactions, and can be interpreted as the new tools used to cadence the production and exchange of these dominant immaterial commodities, images and information.

LIFE ON A SCREEN: A CHANGING EPISTEMOLOGY

In *Simulacra and Simulation*, Baudrillard uses Jorge Luis Borges' well-known allegory of the 'Map and the Empire' to describe the progressive mutation of the relation of the object with its representation. In 'On Exactitude in Science', Borges (1946) narrates an empire in which cartography had become a striving and exacting art. Such were the cartographers' mapping skills and steadfast work that the map of the empire grew to be increasingly detailed. The map eventually became so detailed that it overlaid the entire empire and was eventually mistaken for the empire itself. Baudrillard used this allegory to describe the social and perceptual shifts operated by the media system, and the increasingly vanishing relation of their representations with the 'real' object of reference. By means of a critique of the epistemological values of the photographic image (the most detailed of all mapping techniques), Baudrillard declared the demise of the empire of the 'real' and the rise of the world of simulacra and simulations, a world generated 'by models of a real without origin or reality' (Baudrillard 1994, 1).

The relationship between the phenomenological real and its many possible representations has always been complex, as have the mediated effects of such

representations. In the seventh book of *The Republic* (360 BC), Plato describes a humanity trapped in a cave, kept away from the outside world, but connected to it by the illusionary shadows and sounds that the world projected on the wall of the cave. Critical theorists such as Baudrillard and Debord have, directly or indirectly, used Plato's contention to extend their critique to media-distorted representations of the world and famously argued that viewers of contemporary media, very much like the inhabitants of the cave, are captives to a world of illusory representations. They are trapped in a world of images in which they see, not reality, but only a projection on a screen, a 'spectacle' (Debord 1983 [1967]), a 'simulation' (Baudrillard 1994), a 'pseudo-reality' (Black 2002) that they have come to identify and be/live as the real world. From a certain point of view it is not difficult to see the predictive power of Plato, Baudrillard and Debord's predicaments. Simply think about the ever-increasing number of hours we spend sitting in our modern caves watching a screen. An increasing wealth of representations of the world is brought to us on our screens, and we now communicate, learn, feel and socially exist in/through them.

The empire and its map, the simulacrum, and Baudrillard's socially informed account of the shifts in symbolic and perceptual value of mediated representations remain powerful rhetorical concepts. Specifically, the metaphor of the map, if re-contextualised, can enable new understandings of the fundamental social and perceptual shifts favoured by these new mobile technologies, the new forms of composite imaging, the geolocation-based representations, and the new social patterns of image production and exchange.

A different interpretation of the metaphor of the map offers the opportunity to elaborate on the contemporary systematisation of the representations of the world operated by new geomeia-based technologies and applications. As for the map of the empire that the cartographers continued to grow with increasing levels of detail, the virtual map of the world is acquiring a scale and scope that further exceeds their ambition. The new virtual map deserves attention because of its specific ontological nature and its multiple social evolutions. Its digital hybrid symbolic system seamlessly combines images, texts and sounds. A puzzle of countless photographic images, merged together by geomeia-based applications, constitutes the new visual map on which signs, texts and sounds are pinned down and juxtaposed to systematise and connote the worlds they represent. This new virtual map seems to challenge Baudrillard's descriptions of the image and media

representations as ultimately disconnected from the objects they are supposed to represent.

The use of photographic images in geomeia-based applications, for example, seems to reconfigure the ontological erosion of indexicality described in Baudrillard's four phases of the simulacrum,¹ and lead the image (and its representations) into a fifth phase – the fifth order of the simulacrum, the order of the *geolocational reunion* if you wish, in which the 'world of autonomous images' (Debord 1983 [1967]) and reality are finally reconciled (functionally, technologically, socially). In the fifth geomeia-based rendition of the simulacrum the image is finally recognised for what it has always been: a representation of interconnected physical and social relations, and a system of informational relations (spatial and temporal) among people and the objects of their worlds.

Debord in 1967 was already well aware of the significance of these two processes of 'accumulation' and 'exchange' of representations of the world. Debord described modernity as an immense accumulation of 'spectacles' (Debord 1983 [1967], 2), a collection of images of every aspect of life that fused in a common stream and created 'a pseudo-world apart'. He also characterised the society of the 'spectacle' not as a society simply 'collecting images', but as a system of 'social relations among people, mediated by images' (Debord 1983 [1967], 2). If interpreted from this perspective, the virtual map (the collection of images, texts and sounds juxtaposed and connected to one another by geomeia technologies) can clearly be seen as more than a mere collection of representations of the world. It can be interpreted as a reunion of the once-disconnected 'world of autonomous images' (Debord 1983 [1967], 2) with the real worlds of their producers. Thus the virtual map can be analysed as a visible articulation of the mediations and social relations that it comprises.

Therefore, in what follows I re-think the allegory of the map, and Baudrillard's and Debord's interpretations, to advance a new interpretation of the 'digital' map of the empire. In doing so, I take the photographic image as a starting point. I outline a new geolocational ontology of the image as hybrid and composite, to analyse the virtual map's social evolution and renewed social functions.

REDEFINING THE MAP: FROM REPRESENTATION, TO SIMULATION, TO GEOLOCATION

It is my argument that new geomeia imaging technologies are responsible for a new epistemological shift that is redefining the perceptual and symbolic relation between mediated representations and the real

objects of reference (Lapenta 2009). This transformation is profoundly changing the social function of such mediated representations. In this new phase, a rhetorical concept, that of the map of the empire, is transformed by a set of geolocational software applications, and by their users, into an experiential phenomenon, the 'virtual map' (Google Earth and all the other similar maps) – the 'utopian' map that represents all 'heterotopian' (Foucault 2002) maps that more and more ubiquitously exist on our computer screens and mobiles. The new virtual map deserves in-depth scrutiny because of its distinctive hybrid technological nature (digital + geolocational), and because of the complex social dynamics and developing social functions that it engenders. The digital symbolic system of the virtual map allows the combination of elements, images, signs, texts and sounds which never before could be combined so seamlessly together. Photographic images, signs, texts and sounds produced by geomedial users, and geolocationally merged with each other, thus constitute the virtual map. The virtual map, however, is also intrinsically a social phenomenon. Its origin and basic function essentially lie in the facilitation and organisation of geomedial users' collective production and exchange of images, signs, texts and sounds. The more complex feat of the virtual map is its reconfiguration of the epistemological, social and functional relations of the map's projected world of mediated representations with the real world of its creators.

To put things into a socio-historical perspective, Baudrillard's four epistemological phases of the image seem to closely describe the culturally dominant interpretations and functions of the evolving technologies of the image, from the invention of photography and the shared social perception of the indissoluble link between the photographic image and the objects it represents (Talbot 1844–1846; Sontag 1977), to the evolution of the communicative uses of images in films and television in which images construct narrative pseudo-realities (Russian formalism and semiotics), to the postmodern questioning of reality itself and the digital revolution in which the indissoluble relation between the object and its representation seems to be progressively eroding (Wombell 1991) until it digitally disappears (CGI). New geomedial imaging technologies seem to reconfigure the ontological erosion of indexicality described by these four phases of the simulacrum, and lead the image (and its ultimate embodiment, the virtual map) into a fifth epistemological phase – the fifth order of the simulacrum in which the once separated world of autonomous images and reality are technologically, functionally, perceptually and socially reconciled.

PHOTOGRAPHIC MAPPING: A CHANGING ONTOLOGY AND A NEW FORM OF SOCIAL INTERACTION

In the fifth geomedial-based rendition of the image (the latest in the history of the developing technologies of the image), photography is undergoing yet another technological evolution that is transforming what was a mechanical separation into what is now a digital reunion. The initially mechanically divided images of the world are digitally reunited in the virtual map, geolocationally pinned down by geomedial technologies, juxtaposed and merged as the jigsaw pieces of an intricate puzzle. In the history of photography there are many examples of images that superimpose and blend multiple photographs for communicative or artistic purposes. However, this specific form of digital superimposition and blending (photosynthesis) is creating a genre, photographic mapping, that poses a challenge to photography's conventional ontological nature. This new photographic genre, associated with specific photographic forms and practices, is transforming photography's once inseparable and unique combination of time and space into a complex and fragmented variable. It is important to focus on the theoretical implications of this transformation and engage in a description of the perceptual, epistemological and social functions that image's time and space distanciation and reunion engender.

The desire to stop time is either a fundamental feature or one of the historically strongest biases in the history of photography. Since its invention, photography has been described or wilfully constructed as a key witness to a passing moment or event, and has enduringly been conceptualised as what Innis (1964) referred to as a 'time-biased' medium.² This fundamental feature of photography is being profoundly transformed through digital photographic mapping, where one photograph (and I wonder if this is still the proper name to indicate what this image is) is able to seamlessly merge many photographs of contiguous places taken at different times. This synthesised image, as the single photographs that compose it, is still a visible token of the past; but as a combination of contiguous photographs, it is also a combination of past, present and future, as the photographs that it merges together represent the present, past or future to one another. This new digital photographic map transforms a *time-space unicum* (the photograph taken at a specific time, in a specific place)³ into a fractured time within a *space continuum* (a composed photographic image that merges different times and connects contiguous spaces).

Once the two key dimensions of the time and space of a photographic image are operationally separated they give

space to new possible forms of communicative re-articulation. In the case of live audio-video communications, for example, space is suspended in favour of linear time; the image is transformed in a complementary token of exchange between different spaces to sustain the conditions of a 'live' (continuous time) communication. Conversely, in the virtual map, images taken at different times are combined together in a contiguous linear space, juxtaposed, superimposed and merged by means of spatial (and not temporal) relation. In this system, space, not time, is perceived as the existing continuous relation. Time is suspended to sustain the natural conditions of objects' co-presence and spatial interrelations. The contiguous space of the image is always implied in each photograph, but not directly acknowledged (represented). Any photograph is a photograph of something, but also a non-photograph of what is excluded (out of frame). If space is the key variable, all the pictures of the world can be seen as interconnected by relations of relative distance from and proximity to one another.

A technology that articulates these spatial interrelations (Google Earth, Google Maps, or Photosynth, for example) generates a system that mimics a fundamental condition of existence of real objects, their spatial interrelation. This system also creates a paradox for the photographs it correlates and merges. On the one hand, it reinforces the 'realist bias' of photography (Burgin 1982), the historical bias that has reinforced our perception of a photograph as proof of the existence of the objects it represents. These spatial relations create yet another link between the represented (the object) and its representation (its image), knotting them together at a certain location by means of proximity to other images (and objects). On the other hand, this system also redefines the ontological principle that sustains this 'realist bias', transforming a physical relation, that between the image and the object of its representation, into a cognitive relation; from what we know to be true of the object, its condition of spatial relation to other objects, to what we think to be true of an image on the map, the conditions of spatial relation of an image to the other images on the virtual map.

Therefore the virtual map, a 'space-biased' medium (Innis 1964), plays an active role in a process of perceptual transformation. This involves substituting a homogeneous physical organising principle, the photograph's indexicality in which time and space are linked together, with a heterogeneous and hybrid organising principle, *geolocality*, in which time is fragmented, and where technologically determined space relations remain as the surviving organising principle. Geomedia reinforce this perceptual transformation,

substituting the physical link between the object and its image (indexicality) with *geolocality*, the technologically mediated link between the image and the physical space of the object and the user.

It is important to understand the complex nature of this specific technological reunion, but it is perhaps more important to understand its changing epistemological interpretation, and the specific social functions that this reunion serves.

In 1991 Jameson was elaborating on the human limits of cognitive mapping. Moving from a Lynchian, Althusserian and Lacanian-inspired definition, Jameson described 'cognitive mapping' as the coordination of existential data (the empirical position of the subject) with an abstract conception of an unrepresentable socio-geographic totality (Jameson 1991, Chapter I).⁴ If framed within these two perspectives the virtual map then can be interpreted as a utopian projection, or a heterotopian realisation, of this once-unrepresentable socio-geographic totality. More than a mere collection of representations of the world, the virtual map can be interpreted as *a new (utopian) social space* – a visible articulation of the individual and social mediations of the once-disconnected world of autonomous images (Debord 1983 [1967]) with the real (Sontag 1977; Baudrillard 1994), the cognitive (Jameson 1991) and the social worlds of their producers.

The virtual map is built by the cooperation of two entities. On the one hand, we have the (soon-to-be-interconnected) software platforms that are offered for its growth, the virtual surfaces offered for the renditions of the map by applications such as Google Earth, Google Maps, Photosynth, QuickTime VR, iPhoto 2009 that seamlessly combine images, texts and sounds. And, on the other hand, we have the new generation of cartographers, comprising all the individual media users that contribute with pieces of representation of themselves and the world around them to the enormous puzzle of the virtual map. The new cartographers of the world produce images (but also texts and sounds) that are geo-positioned on the virtual map by geomedia technologies that geotag these images and juxtapose them to one another in a growing, interlinked and ever-changing representation of the world. Both the map and the pieces composing it are in continuous growth and evolution as the virtual map adapts and follows the lives of its cartographers.

The geomedia-based virtual map is ultimately a socio-projective tool that transforms our personal and collective cognitive mapping of the world. It transforms a subject's abstract relationship with an unrepresentable

cognitive projection of the totality of the 'real conditions of existence' (Jameson 1991) into a subject's relationship with the actual technological representation of the socio-geographic totality of our 'mediated conditions of existence' (composed by all the images, signs and texts socially produced and shared by media users and synthesised in the virtual map). I argue that this shift in the organisation of the representations of the world can be interpreted as a paradigmatic shift that transforms the new synthesised image of the world (the virtual map) into a new socio-organisational principle that has far-reaching consequences for the social relations that these new forms of representations of the self and the world engender.

THE CONVERGENCE OF THE GEOSPHERE, THE INFOSPHERE AND THE BODY: VISUALISING IDENTITY AND IMAGINED COMMUNITY

While the effects of this geomedia-rendered reunion are still evolving and complex, they can be contextualised as part of a general development in information and communication technologies based on the fast-paced adoption of new geolocational technologies and their

rapidly changing social functions and significations. Synthetically we can say that information technology communications have moved through two phases normally referred to (somewhat problematically) as WEB 1.0 and WEB 2.0 (DiNucci 1999; O'Reilly 2005). If WEB 1.0 can be seen as the initial move towards the simple transfer of content (image, text, sound) to a new digital medium and delivery system (digital information, the computer and the Internet), WEB 2.0 has seen the reorganisation of such distribution of content on the basis of existing and developing social networks. In this new ecosystem, social identity and social interactions have been transformed into data, and data have become part and parcel of online identity and mediated social interactions. For example, age, location, interests, photographs and videos, comments and replies, links, friends lists and groups have all become, according to Sundén, information used in social networking sites (SNS) and online social platforms to 'type oneself into being' (Sundén 2003, cited in Boyd and Ellison 2007, 211). These data serve as exchanged 'identity markers' (West and Turner 2008, 389) in SNS, and are used by users to perform identity and to develop a sense of 'imagined community' (Anderson 1991). What makes



FIGURE 1. Staying connected on Foursquare. Photo: Foursquare.

WEB 2.0 platforms different from pre-existing forms of mediated-communication is, according to Boyd and Ellison, that they 'enable users to articulate and make visible' their social identity and 'social networks' (Boyd 2007; Boyd and Ellison 2007). The process of production and consumption of images, sounds and texts in SNS can then be interpreted as part of a process of identity elaboration, impression management and self-presentation (Donath and Boyd 2004, 71–82). It is how people maintain relationships and continuously perform and construct and make visible their online social identities.

WEB 2.0 platforms, however, can also be observed from a different point of view, and be described as an innovative form of coordination and social articulation of the exchange of information: a form of adaptation to the selection of relevant information among the ever-increasing amount of data available and their ever-changing social function and signification. If we can argue that search engines like Altavista, Yahoo and Google really created the first generation of the Internet as we know it (by actually allowing us to navigate the immense archive of collected information and data available on the Internet), we can interpret WEB 2.0 as an adaptation to the increasing and exponential growth of such data that required more sophisticated and individually tailored systems to navigate and organise available information according to other significant paradigms than a text-based search string. Text (together with content-based searches) is and will remain one of the main signifying systems used to scout the Internet in search of relevant information. Yet it is evident that other tools are necessary to render and organise the ever-increasing amount of non-textual information available and their highly differentiated signifying systems (signs, photographs, images and sounds). The increasing use and popularity of WEB 2.0 applications and the evolution of geomeia represent part of this evolution, and differentiate WEB 2.0 applications and geomeia-based communications and exchanges from the first-generation types of computer-mediated systematisation of information.

Observed from these interrelated perspectives, it is easy to understand how it was only a question of time (and technological development) before the body, and its location, would become a system of reference used to search and organise the collective information flows that converge and constitute the virtual map in a fashion significant for the individual. Geomeia and associated photographic applications, such as Photosynth and Google Earth, seem to represent a first response to this

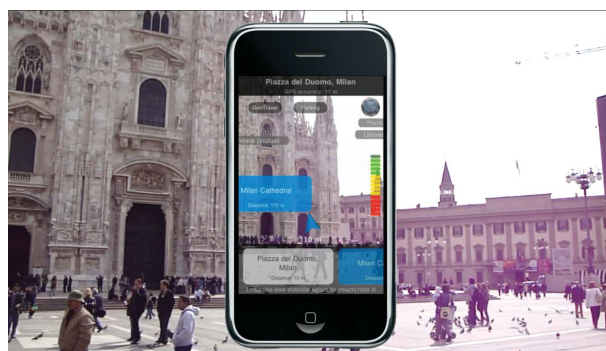


FIGURE 2. Augmented reality and space.

need to contextually organise information – or, perhaps more significantly, the first response to technologically engage with a multi-sensorial organisation of the increasingly multimodal and hybridised nature of the information space (see also Sarah Pink's article in this volume).

The geomeia-based virtual map can be theorised as a mediating space, a projective tool, in which two entities and identities converge: the *geosphere* – the sphere of the body and the object, the physical environments in which media users communicate and live – and the 'infosphere' (Toffler 1980, 172; Garson 2006, 12; Floridi 2007, 59–64) – the bits of information, the photographic, iconic or symbolic representations of these physical environments that media users produce and share.

Geomeia transform the geolocation of their users, their geosphere, into data, and connect these data to existing information that describe users' online activities and identities (and their infosphere). By means of software applications (Foursquare,⁵ Gowalla, Bliin.com, Google Latitude, Photosynth, QuickTime VR, Places iPhoto 2009, Layar, Ekin.net), geomeia platforms connect and merge on a live navigable virtual map (Google Earth, Google Maps, Live Maps), the user's physical location and the ever-increasing wealth of information that they produce as part of their online social interactions.

Geomeia become tools used by subjects to navigate their social worlds, to organise their local social relations and to maintain their networked 'latent ties' (Haythornthwaite 2005; Boyd and Ellison 2007). Within this process, the photographic virtual map serves as the tool used to project, to make visible, this social performance, this personal mediated identity and 'imagined' community (a utopian representation of the socio-geographic totality that Jameson described as unrepresentable). Geomeia help users to navigate the geosphere, but also provide tools to organise users'

participation in the creation and visualisation of the imagined community of the infosphere.

As such, geomedial can also be interpreted as new regulatory systems that articulate and organise these new hybrid forms of social interactions, communication and exchange among individuals. The geomedial-based map used to visualise, articulate and guide these social interactions can thus be understood as a *social navigation system* adopted by the individual to reduce the complexity of global information systems to individually manageable and socially relevant information exchanges. Along with traditional search engines (the regulatory systems of WEB 1.0) and social networking sites (the social organisational tools of WEB 2.0), geomedial provide one more tool to link and navigate the geosphere and the infosphere for data relevant to the subject and his or her relevant others in a live and continuous exchange of information. Once a disconnected collection of images, data and texts, the infosphere is now readily synthesised on the virtual map organised in a network of social interactions and exchanges that are finally connected by geomedial technologies to what cannot be disconnected any more – one's individual physical reality and one's own digital identity.

GEOMEDIA AND THE NEW ECONOMY OF SPACE: THE COMMODIFICATION OF COLLECTIVE IMAGE PRODUCTION

To fully and critically understand the social impact of the geomedial-based reorganisation of virtual space, I compare it historically with the global reorganisation of time that took place at the turn of the twentieth century. This comparison also allows us to understand the new social position acquired by the image and its relative function in such redefinition of space.

The history of modernity has been characterised by a growing interconnectedness of different nations and cultures and an ever-increasing volume of global exchange of services, commodities and communications. The progressive evolution of these national and international economic exchanges created a host of organisational, economic and legal problems that were eventually resolved with a much more precise definition of the territorial national space, and with the nations' progressive adoption of 'Universal Standard Time' (Kern 1983). The creation and adoption of Universal Standard Time was politically motivated by a specific economic and social agenda and designed to organise this increasing global movement and exchange of people and commodities.

In a way, this social uniformisation of time per se was nothing new. Durkheim, one of the first authors to elaborate on the social construction of time, acknowledged that all societies required a socially shared definition of time to create a framework for the 'rhythm of social life' (Durkheim 2001 [1912]).⁶ Late modernity's shared definition of time was, however, characterised by a historically unprecedented level of precision, diffusion and social pervasiveness. The precise social scheduling of time that was initially required for the coordination of transport of people and commodities, and the coordination of international markets, soon became a tool for the organisation of labour,⁷ interpersonal communications and public services. The precise social scheduling of time quickly trickled down into the organisation of the most mundane and personal events progressively dominating and regulating our lives.

It is with this antecedent in mind that I suggest that this 'old' framework, the familiar social dynamics and core logic of modern capital's expansion, could invite a different interpretation of the mediated re-elaboration of time and space operated by geomedial technologies and the social functions of the images geolocally distributed and organised on the virtual map.

If we situate the current development of geomedial-based technologies in terms of their emergence in relation to this modern capitalist system, then this raises new questions of how social dynamics, forms of commodity exchange and the creation of a technologically enhanced immaterial space can be understood. As the above analyses have shown, the apparent promotion of flexibility and the autonomy-enhancing qualities of these new communication technologies also come in constant tension with an opposite function that sees them as new organisational and regulatory systems. From this perspective, geomedial can not only be interpreted as the evolution and response to the matured need for new organisational criteria to coordinate and link mediated interactions, but also as the attempt of new actors and the same economic and political forces that regulate physical time and space to organise and regulate the global placeless flow of information into locally controlled and physically contextualised information systems. In this framework, geomedial and the virtual map (the utopian space in which these new forms of social interaction and exchange take place) can be conceived as instruments enabling the capitalisation of the production (Bell 1976, 127, 348) and exchange (Castells 2000) of the immaterial commodities that dominate these new immaterial social

environments – the images, texts and sounds regularly and collectively produced and exchanged by media users.

Observed from this intentionally critical perspective, the similarities between the two historically momentous redefinitions of time and space are striking. Geomedia are to space (material and immaterial) what the watch is to time. They regulate social behaviour and interpersonal communications, coordinate social interactions and organise the production and exchange of the founding immaterial commodities (Negri and Hardt 2001) constitutive of these immaterial spaces (Drucker 1969; Porat 1977; Lyotard 1984). Information within these systems is not only linked back to their local referents (the physical space and the body of the user), but users themselves (and their surrounding space) are transformed into information – a commodified image – which is once again embedded in a controlled as well as a socially and economically structured system regulated this time not by the watch, but by new geomedia technologies and the virtual map.

Similarly to other strategies affecting other forms of material and immaterial labour (Ursell 2000; Ross 2003; Stahl 2005; Banks 2007, 2010; Holt and Lapenta 2010), the geomedia liberatory function can be interpreted as yet another form of ‘camouflage of its real intentions and effects’, ‘to de-differentiate work and non-work environments’ and to attenuate the boundaries between the real and virtual self and ‘the work and non-work self’ (Banks 2010, 256). As such, geomedia can be interpreted as the predictable expansion of global market economies from the systematic organisation and capitalisation of time (sanctioned by Universal Standard Time) to the systematic *informatisation* and capitalisation of an individual’s immaterial space. The virtual map, and the images that compose it, can be interpreted as immaterial commodities produced by the immaterial labour (Lazzarato 1997; Terranova 2003) of geomedia users, organised by systems and actors that control and capitalise upon the emerging immaterial spaces in which images are produced and exchanged.

The history of the image is one of ever-changing technological and cultural evolutions; each evolution characteristic of historically evolving media epochs and paradigmatic of specific cultural, social and economic interpretations. All the arguments presented so far are acknowledgements of this ever-changing technological nature as well as of the complex and evolving social functions of the image; they represent an initial challenge, and not an exhaustive discussion, of the new ontological, epistemological, social, cultural and economic questions that come with the investigation of

the latest technological evolutions of the image, which was first a form of mechanical reproduction, then an artistic tool for descriptive or narrative pseudo-realities – a commodified artefact, and a dominant form of communication in a world of art galleries, journals, billboards, family albums, movie theatres and televisions. It later became a new form of digital representation, initially questioned by postmodern critical thinking, and now reincarnated as a foundation of an evolving world of virtual maps and ‘augmented realities’ (Uricchio, in this volume). It is a new, meaningful form in an ever-expanding parallel world of image-based representations, virtual spaces, imagined identities and evolving virtual communities. And once again, and more than ever, it is both form of expression and commodified object of exchange in the newly created virtual environments.

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NOTES

- [1] ‘In the first case, the image is a good appearance: the representation is of the order of sacrament. In the second, it is an evil appearance: of the order of malefice. In the third, it plays at being an appearance: it is of the order of sorcery. In the fourth, it is no longer in the order of appearance at all, but of simulation’ (Baudrillard 1994, 6).
- [2] According to Innis, time-biased media favour the preservation of knowledge over long periods of time, whereas space-biased media favour the dissemination of knowledge over great distances. The bias of communication directly influences the way media exert control and, consequently, the way society is organised.
- [3] William Henry Fox Talbot describing photography: ‘Groups of figures take no longer time to obtain than single figures would require, since the Camera depicts them all at once, however numerous they may be’ (Talbot 1844–1846).
- [4] Jameson was at the time acknowledging that despite the evolution in geographic mapping techniques, it was clear that ‘there can be no true maps’. He also recognised that ‘at the same time it also becomes clear that there can be scientific progress, or better still, a dialectical advance, in the various historical moments of map-making’ (Jameson 1991, 52).

- [5] For descriptive videos, visit:
www.youtube.com/watch?v=b64_16K2e08 or <http://www.vimeo.com/843168> or <http://www.youtube.com/watch?v=4ZLLqdzxTs&feature=fvst>.
- [6] In *The Elementary Forms of the Religious Life* (2001 [1912]), Durkheim challenged Kant's 'a priori' definition of 'inner time' with his account of the complex 'social nature of time'. Time, Durkheim says, is always a social institution and cannot be reduced to a simple interpretation of the time of nature or the individual. Sundials, candle clocks, hourglasses, bells, water clocks, mechanical clocks, electronic clocks, atomic clocks and the omnipresent wristwatch are just a few among the many devices that measured history and the passing of time. They all shared a common function – that of regulating and organising social interaction.
- [7] In 1893, an article in the *Scientific American* journal characterised this transition by describing one of the Universal Standard Time core applications and social values – the measurement of labour. The article 'Recording Time of Employees' described a machine that stamped an employee's card with the time s/he entered and left the work place, precisely counting the minutes and hours that s/he would be later paid for (finally accomplishing Benjamin Franklin's 1748 axiom 'Time is money').

REFERENCES

- Anderson, B.R. 1991. *Imagined communities: Reflections on the origin and spread of nationalism*. London: Verso.
- Banks, M. 2007. *The politics of cultural work*. Basingstoke: Palgrave Macmillan.
- . 2010. Autonomy guaranteed? Cultural work and the 'Art Commerce Relation'. *Journal for Cultural Research*, 14 (3): 251–69.
- Baudrillard, J. 1994. *Simulacra and simulation*. Ann Arbor: University of Michigan Press.
- Bell, D. 1976. *The coming of post-industrial society*. New York: Basic Books.
- Black, J. 2002. *The reality effect: Film culture and the graphic imperative*. New York and London: Routledge.
- Borges, J. L. 1946. On exactitude in science. In B. Lynch Davi, *Museo, Los Anales de Buenos Aires* 1 (3).
- Boyd D. 2007. The significance of social software. In *BlogTalks reloaded: Social software research & cases*, edited by Thomas N. Burg and Jan Schmidt. Norderstedt: Books On Demand.
- . 2008. None of this is real. In *Structures of participation in digital culture*, edited by Joe Karaganis. New York: Social Science Research Council.
- Boyd D. M., and N. B. Ellison. 2007. Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication* 13 (1): 210–30.
- Burgin, V., ed. 1982. *Thinking photography*. London: Macmillan.
- Castells, M. 2000. The rise of the network society: The information age. In *Economy, society and culture*, vol. 1, 2nd ed. Malden: Blackwell.
- Debord, G. 1983 [1967]. *Society of the spectacle*. London: Rebel Press.
- DiNucci, D. 1999. Fragmented future. *Print* 53 (4): 32.
- Donath, J., and D. Boyd. 2004. Public displays of connection. *BT Technology Journal* 22 (4): 71–82.
- Drucker, P. 1969. *The age of discontinuity*. London: Heinemann.
- Durkheim, E. 2001 [1912]. *The elementary forms of the religious life*. Oxford: Oxford University Press.
- Floridi, L. 2007. A look into the future impact of ICT on our lives. *The Information Society* 23 (1): 59–64.
- Foucault, M. 2002. Of other spaces. In *The visual culture reader*, edited by N. Mirzoeff. London: Routledge.
- Garson, D. 2006. *Public information technology and e-governance: Managing the virtual state*. London: Jones & Bartlett.
- Haythornthwaite, C. 2005. Social networks and internet connectivity effects. *Information, Communication & Society* 8 (2): 125–47.
- Holt, F., and F. Lapenta, eds. 2010. Autonomy and creative labour. Special issue, *Journal for Cultural Research* 14 (3).
- Innis, H. A. 1964. *The bias of communication*. Toronto: University of Toronto Press.
- Jameson, F. 1991. *Postmodernism, or, the cultural logic of late capitalism*. London: Verso.
- Kern, S. 1983. *The culture of time and space, 1880–1918*. Cambridge, MA: Harvard University Press.
- Lapenta, F. 2008. *Define geomedía*. Online publication. <http://www.francescolapenta.wordpress.com/.../define-geomedía-and-web-30>.
- . 2009. *Mapping the world*. Online publication. <http://www.scribd.com/doc/9896688/Mapping-the-World-A-Brief-Essay-on-the-Changing-Status-of-Collective-Image-Production-F-Lapenta>.
- Lazzarato M. 1997. *Lavoro Immateriale. Forme di Vita e Produzione di Soggettività* [Immaterial labour. Forms of life and the production of subjectivity]. Verona: OmbreCorte.
- Liotard J. F. 1984. *The postmodern condition*. Manchester: Manchester University Press.
- Negri, A., and M. Hardt. 2001. *Empire*. Cambridge, MA: Harvard University Press.
- O'Reilly, T. 2005. What is Web 2.0? Design patterns and business models for the next generation of software. *International Journal of Digital Economics* 65 (2007): 17–37.
- Porat, M. 1977. *The information economy*. Washington, DC: US Department of Commerce.
- Ross, A. 2003. *No-collar: The humane workplace and its hidden costs*. New York: Basic Books.
- Sontag, S. 1977. *On photography*. London: Penguin.
- Stahl, M. 2005. Non-proprietary authorship and the uses of autonomy: Artistic labor in American film animation, 1900–2004. *Labor: Studies in Working-Class History of the Americas* 2 (4): 87–105.

- Talbot W. H. F. 1844–1846. *The pencil of nature*. London: Longmans.
- Terranova, T. 2003. *Free labor: Producing culture for the digital economy*. Online publication. <http://www.electronicbookreview.com/thread/technocapitalism/voluntary>.
- Toffler A. 1980. *The third wave*. London: Bantam.
- Ursell, G. 2000. Television production: Issues of exploitation, commodification. *Media, Culture & Society* 22 (6): 805–25.
- West, R., and L. Turner. 2008. *Understanding interpersonal communication: Making choices in changing times*. Boston, MA: Cengage Learning.
- Wombell, P., ed. 1991. *Photovideo: Photography in the age of the computer*. London: Rivers Oram Press.