DIGIMAG

the digicult's project journal

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PLACES AND SPACES

DIGIMAG JOURNAL

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WHAT IS DIGIMAG

Driven by the above experience and stemming from the monthly magazine Digimag, 72 issues in 7 years Digimag Journal is a new interdisciplinary peer-reviewed online publication, seeking high-standard articles and reviews at the intersection between digital art and contemporary art production, the impact of the last technological and scientific developments on modern society, economy, design, communication and third millennium creativity.

Digimag has been changing, year after year, issue after issue it has morphed into a hybrid instrument able to reflect the complexity of contemporary artistic and cultural production. The magazine has quickly become a cultural instrument, a tool for academics, reseachers, students, artists, designers, geeks and practioners who constantly break the disciplinary boundaries of different media technologies. This is the reason why we decided to transform Digimag into a scholarly Journal based on articles spanning a wide range of contemporary digital and scientific fields.create private and social experiences through interactions between humans and their artworks

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Digimag Journal wishes to be an innovative form of cultural product that moves beyond classical cultural definitions, thus avoiding strict productive and creative labels. This means that it seeks to overcome traditional cultural production models based on institutional economic support or private funding, going beyond the limits that other independent productions have been sometimes affected by, becoming, in this way, a professional reality of international importance.

Digicult was born to give voice and visibility to a new generation of interdisciplinary authors, expand their circuits into an international context, and simultaneously break the existing inflexible publishing rules of the press, by exploiting potentialities of the Web, and its free networks in order to grow, to survive and to spread. The new Digimag journal is our voice. We hope you will appreciate our work as you alwys did in the last years. Have a good read

Marco Mancuso , Lucrezia Cippitelli, Claudia D'Alonzo, Bertram Niessen, Roberta Buiani

"PLACES AND SPACES"

The birth, growth and development of spaces open to the creative and experimental use of Media and Digital technologies have affected the production and dissemination of contents, have enriched the art system and its boundaries, have provided new methodologies of production, modes of art display and creative practices (and the daily work of individuals engaged in the field). These groundbreaking pr actices span visual art and design, science and technology innovation, social studies and polit àics, ecology and economy, music and architecture. The context where they take place is hybrid: hacklabs and bureau of research; mailing lists; virtual and physical exhibition spaces; media centers and museums.

This call for contributions wishes to assess these emergent places of innovations and this rich proliferation of research, critical thinking and radical praxis based on horizontal cooperation.

The call considered, but was not limited to, the following questions:

- How have the reciprocal relationship between spaces, research and creative/artistic processes been transformed? Is it possible to map the historical contexts that gave rise to spaces involved in creative practices based on Media?

- How to describe, from a critical perspective, the tension between public and private, institutional and independent space?

- What kind of economies have emerged from these spaces working with new media creative practices? What are the links (if any) between these spaces and contemporary art, culture markets and immaterial culture and the city? The institutionalization of independent spaces and their long term development has been in most cases supported by public fundings. Given the recent cuts, what new strategies of survival are available?

- How has Media culture affected mainstream culture and its spaces? And in turn, how have spaces been affected by issues of production and dissemination of art and knowledge? Are there new objectives and strategies to be followed by spaces and institutions involved in these fields?

- What spaces could (and can today) be considered most relevant to the development of production, exhibition, research and archiving of Media Art? How are methodologies and practices of archiving, preserving and disseminating Media Art evolved? What displaying techniques created by institutional and independent spaces can be considered the most significant and experimental?

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- What spaces could (and can today) be considered most relevant to the development of production, exhibition, research and archiving of Media Art? How are methodologies and practices of archiving, preserving and disseminating Media Art evolved? What displaying techniques created by institutional and independent spaces can be considered the most significant and experimental?
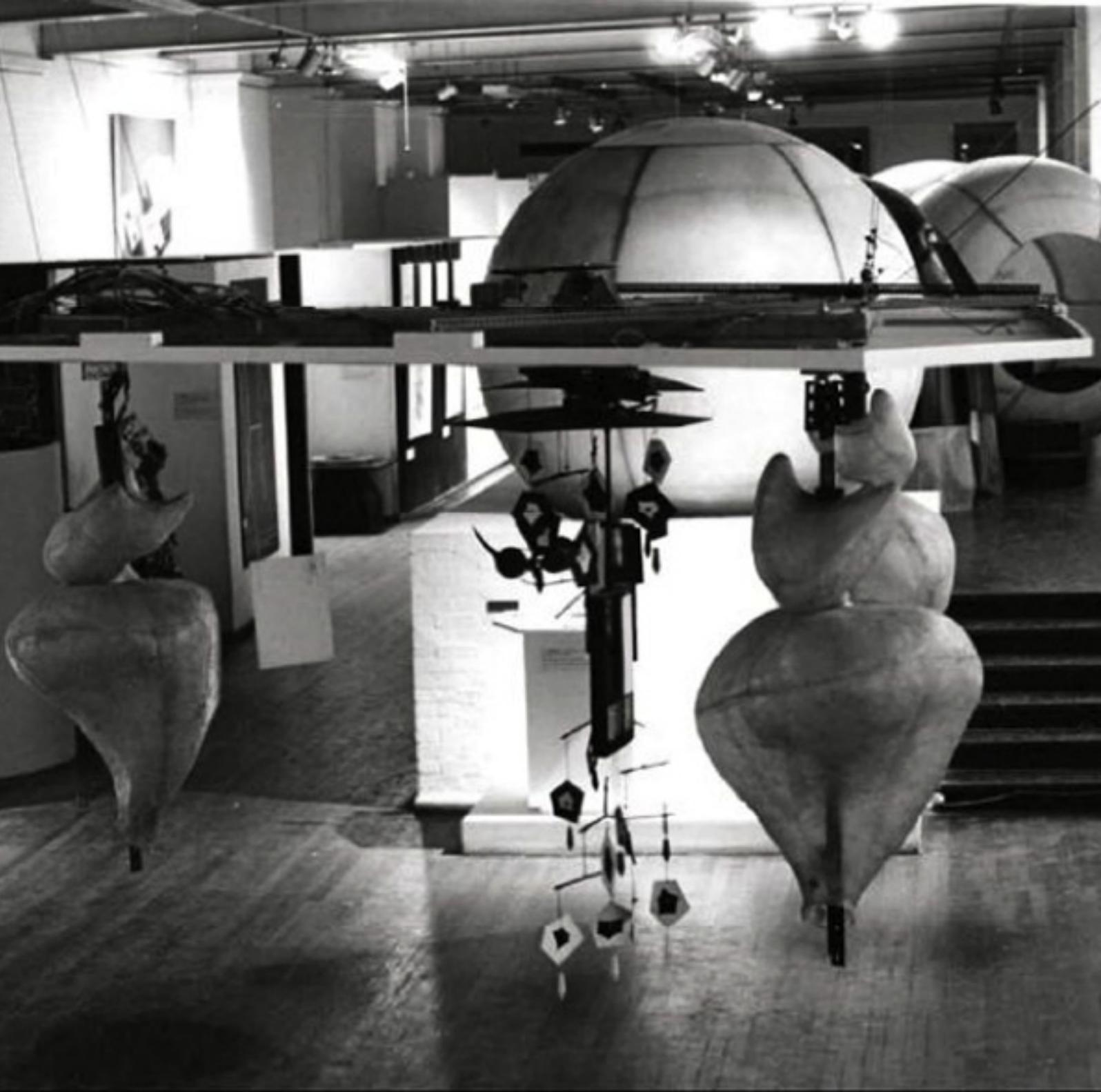
Cybernetic Serendipity, Exhibition View, ICA London 1968 http://cyberneticserendipity.net/

SEARCHING NEW SPACES

For unstable media

by Donata Marletta

This essay explores the current issues related to the uneasy relationship between presentation spaces and New Media Art. The terrific outburst of new media art projects during the last decades is challenging traditional curatorial models in relation to space, and redefining the relationship between artists, curators, and audiences. Owing to its intrinsic characteristics of immateriality, interactivity, participatory and process-oriented art, new media practices require more appropriate presentation spaces that go beyond the conventional white cube/black box settings.

In his paper "An Inventory of Media Art Festivals" (2006), artistic curator and critic Krajewski claims that in the early 1980s media art first encountered its audience through dedicated festivals. These festivals emerged as a cultural phenomenon in order to respond to a need of new presentation spaces for new media art projects. Most of media arts festivals take place both within metropolitan areas and in small towns outside the conventional inner-city spaces. These events offer a wide selection of settings, ranging from old disused factories (e.g. Usine C, Montreal, CA) and abandoned industrial buildings to old churches (e.g. St. George's Hall, Liverpool, UK) and hyper technological venues (e.g. Ars Electronica Center, Linz, AT). In his book "Avant-Garde Performance: Live Events and Electronic Technologies" (2005), Berghaus argues that contemporary art centres and festivals fostering avant-garde experimental artworks have started to develop and proliferate in order to present and give recognition to innovative forms of expression.

Today, new media art festivals flourish worldwide, providing access to a kaleidoscopic variety of spaces. Festivals such as Ars Electronica (Linz, Austria), Transmediale (Berlin, Germany), and Elektra (Montreal, Canada), just to name a few, celebrate art and technology and represent alternative platforms for the presentation of media art projects, allowing people to meet in physical spaces in order to share, discuss and collaborate on an international level. A central element within these festivals is the organisation of satellite events and talks that encourage critical debates and cross-boarder collaboration between artists, curators, and experts in the field. Owing

to the fact that several media art festivals are frequently linked to public funding and cultural institutions, the main issue with these events is that some of them are losing the critical attitude in their approach and the analytical focus that were the key elements when they first appeared in the art scene. Many of the more established media art festivals have changed since their inception, becoming mere celebratory events whose central aim is to entertain the audience instead of questioning technology and its sociological and political impact.

In the early 1990s new media art projects found another important platform in the emerging Networking culture and Web-based communities. Through these virtual spaces artists were able to present, distribute and discuss their projects, bypassing conventional exhibition spaces. Scholz (2006) argues that today venues for new media art are not predominantly festivals or museums but virtually distributed communities. In particular, the author refers to *extreme sharing networks* that he defines as conscious, loosely knit groups based on commonalities and shared ethics. These groups function as nodes of users/producers and provide alternative platforms of production and distribution of cultural practices.

Within these *extreme sharing networks* researchers, artists, and activists share their works and knowledge. A few examples of these units are groups such as the Australian network Fibreculture (http://www.fibreculture.org/), a forum for the exchange of ideas that encourages debates around issues related to information technology, and the media research centre Institute of Network Cultures (INC) (http://networkcultures.org/wpmu/portal/), founded in 2004 by media theorist and activist Geert Lovink. The INC organises conferences, publishes books and fosters online dialogue between researchers committed to the study of network systems. *Extreme sharing networks* play a critical role functioning as connective cultural nodes for critical debates and the mutual sharing of knowledge.

Within such a dynamic context the role of the curator has changed, becoming more and more committed to mediation and interpretation.

Cybernetic Serendipity Exhibition Poster http://www.medienkunstnetz.de/exhibitions/serendipity/

It is approximately from the 1960s onward that we can speak on the advent of the neo avant-garde and the increasing use of new technological media, which created new meanings and new conceptions of time and space. Art generated with a computer resides in no place and time, enabling the collapse of the barriers of past, present, and future. Artists engaged with technology explore, and often exploit, both the critical and technological potentials of the new media.

Early examples of computer art exhibitions date back in 1968 when Jasia Reichardt curated the influential exhibition *Cybernetic Serendipity* at the Computer Art Society (CAS) in London. The principal idea was to examine the role of cybernetics in contemporary arts. The exhibition aimed to explore the relationships between technology and creativity, and showed how persistent the use of computers had become in the creative process itself. Reichardt recalls: "The exhibition included robots, poetry, music and painting machines, as well as all sorts of works where chance was an important ingredient. It was an intellectual exercise that became a spectacular exhibition in

the summer of 1968." (Media Art Net: "Cybernetic Serendipity"). *Cybernetic Serendipity* was the first exhibition that aimed to demonstrate all aspects of computer-aided creative activity: art, music, poetry, dance, sculpture, and animation.

A few decades later, in 1985, philosopher of postmodernism Jean-François Lyotard curated the exhibition *Les Immatériaux* at the Centre Pompidou in Paris. The exhibition intended to show the cultural effects of new technologies and the experience of overexposure and dispersion in postmodern culture. In his article "Overexposure: Les Immatériaux" (1986) Birringer describes the exhibition space as a labyrinth of sounds and sights, or hanging islands, evoking "(…) a temporal multi-sensory experience of an author-less, discontinuous, placeless world of invisible interfaces between heterogeneous objects, artefacts, industrial products, and complex theoretical constructs" (Birringer, 1986). All these early attempts for presentation of computer-generated artworks have certainly formed the basis for future experiments, both in terms of curatorial models and in the selection of

appropriate exhibition spaces.

Today, the interactive and immaterial nature of several new media art projects entails that curators need to establish a connection between physical and virtual spaces, emphasising the participatory nature of the artworks and the active role of the audience. In the opinion of Paul (2008) curators engaging with new media frequently mediate between the artist and the institution, between the artwork and the audience, and between the artwork and the critics, creating new collaborative models of production and presentation. Nowadays, new media art and multimedia art creations have gained an important role in contemporary art production. It is worth noting that major art institutions, galleries and museums worldwide run online and virtual exhibition spaces which, in addition to calendars about current exhibitions and information for the visitors, showcase experimental digital art projects and Internet-based art exclusively available for online users. A few examples are the online exhibition space Gallery 9, affiliated with the Walker Art Center in Minneapolis http://gallery9.walkerart.org/; the online gallery space Artport, launched by the Whitney Museum in New York http://whitney.org/Exhibitions/Artport/, and the Rhizome ArtBase, an online archive of new media art http://rhizome.org/artbase/.

Cyberspace enables the appearance of new forms of social aggregations through which individuals meet and build new connections. Several scholars (Mitchell, 1995; Ostwald, 1997; Crang, 2000) have adopted architectural metaphors to theorise cyberspace and its virtual environments. In order to emphasise its main characteristics of electronic social space and point of exchange many studies associate cyberspace with the Greek *agora*. Today a new form of intangible space has emerged, the digital agora, a virtual space for collaboration, interaction and connectivity (Marletta, 2012). With the emergence of mailing lists, websites, and online archives ideas are able to freely circulate and the line between artists, theorists and curators is rapidly dissolving. According to the recent transformations in terms of art production, the traditional role of the curator has been reshaped and readapted to the new context.

Paul (2006) argues that curators need to emphasise and develop new strategies for documentation of artworks, which are collectively created by several authors and time-based. Owing to the collaboration between different actors, the production and presentation processes are becoming more flexible, and for this reason require a strong awareness of the process itself. As a consequence of the popularisation of networked mobile devices – such as PDA, smartphones, and tablets, the involvement of the audience in the curatorial process is leading to what Paul (2006) describes as 'public curation' that entails new horizontal and participatory forms of filtering.

Fig: The Beauty and the East http://www.ljudmila.org/~vuk/nettime/

De Souza e Silva (2006) defines networked mobile devices as 'social interfaces'. A 'social interface' intermediates interactions between multiple users, reshaping both communication relationships and the space in which these interactions take place. 'Social Interfaces' foster the emergence of the so-called 'hybrid spaces' (De Souza e Silva, 2006), which are mobile spaces created by the continuous movement of users who carry portable devices constantly connected to the Internet. The 'always-on' connection entails that users do not feel the perception of 'entering' cyberspace; as a consequence the distinction between physical and digital spaces becomes blurred. A hybrid space occurs when it is no longer necessary to step out of a physical space to connect to other people located in different geographical areas. This merging in terms of spaces and actors enables the creation of open virtual spaces that foster new collaborative models for the collective creation of culture.

One of the most prominent examples of networking virtual spaces is certainly the Nettime group http://www.nettime.org/, co-founded by artist Pit Schultz and media theorist Geert Lovink in 1995. The name Nettime itself evokes the idea of a network specific time that is different from geotime, the time of clocks. Nettime is a collective entity that offers an alternative form of social organisation in opposition to individual cultural practices.

FEATURED WORK

Digital: A Love Story (2011)
CHRISTINE LOVE
BBS biography community History Hypertext
Interactive art Interface memory Narrative software

Founded in 1999, the Rhizome ArtBase is an online archive of new media art containing some 2155 art works, and growing. The ArtBase encompasses a vast range of projects by artists all over the world that employ materials such as software, code, websites, moving images, games and browsers to aesthetics and critical ends. We welcome submissions to the ArtBase; they are reviewed by our curatorial staff on a monthly basis. Read More »

Rhizome ArtBase http://rhizome.org/ include both

SEARCH THE ARTBASE

BROWSE: | WORKS | ARTISTS | TAGS

Since its inception the list has aimed to connect different disciplines and the cross-boarder collaboration between artists, curators and intellectuals stepping out from the digital realm through real life gatherings. Through the organisation of seminal meetings such as the "Beauty and the East" held in Ljubljana (Slovenia) in 1997 http://www.ljudmila.org/~vuk/nettime/, and the 'Hybrid WorkSpace' (HWS) organised during the exhibition of contemporary art Documenta X, in Kassel (Germany) in 1997 http://www.medialounge.net/lounge/workspace/, the Nettime group encourages and promotes the diffusion of informal production units. Events such as "Temporary Media Labs", "unconferences" and "BarCamps" seem to offer alternative spaces for the sharing and distribution of information and content. The idea of "Temporary Media Labs" emerged from the desire to cover different events, such as conferences, festivals, and exhibitions, by building bridges between real and virtual spaces.

In conclusion, it could be argued that although many questions remain unanswered, debates around the quest for new presentation spaces for new media art continue to animate the myriad of online discussion groups. Such online discussions nurture the advancement of a culture based on the free circulation of ideas, and foster the perpetuation of collective processes and mutual sharing. We are realistically moving towards hybrid forms of spaces, at the intersection between real and virtual, and collaborative models of content creation are becoming a critical element of cultural production. Computer networks provide a kaleidoscopic range of new contexts in which people take active roles, offering more appropriate settings for the extension of what sociologist Bauman (1993) defines as 'cognitive space'.

Cognitive space is structured intellectually and defines our knowledge of others. Within such a space 'others' become interesting and fascinating, and diversity is celebrated as a central element of postmodernity.

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Typically these events are organised and promoted through the Internet, and driven by the principles of 'open source culture', according to which content is publicly available to users.

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Donata holds a PhD in cultural studies from Leeds Metropolitan University (Leeds, UK). She is a freelance writer and her interests rotate around the social implications of new media technologies in contemporary culture and how these media are reshaping the creative act. Her main interests include the study of new media art festivals and how these events create moments of collective sociability. In addition her interests focus on the concept of 'remix' as a collective process for the creation of culture, and the role of online networks in the advancement of Networked Culture. Donata has presented her papers at several international academic conferences and attended the International Marketplace for Digital Arts (IMDA) held in Montreal during the Elektra International Digital Arts Festival. In 2008 she joined the network Digicult, and has been a regular contributor with articles, festival reviews, and interviews.
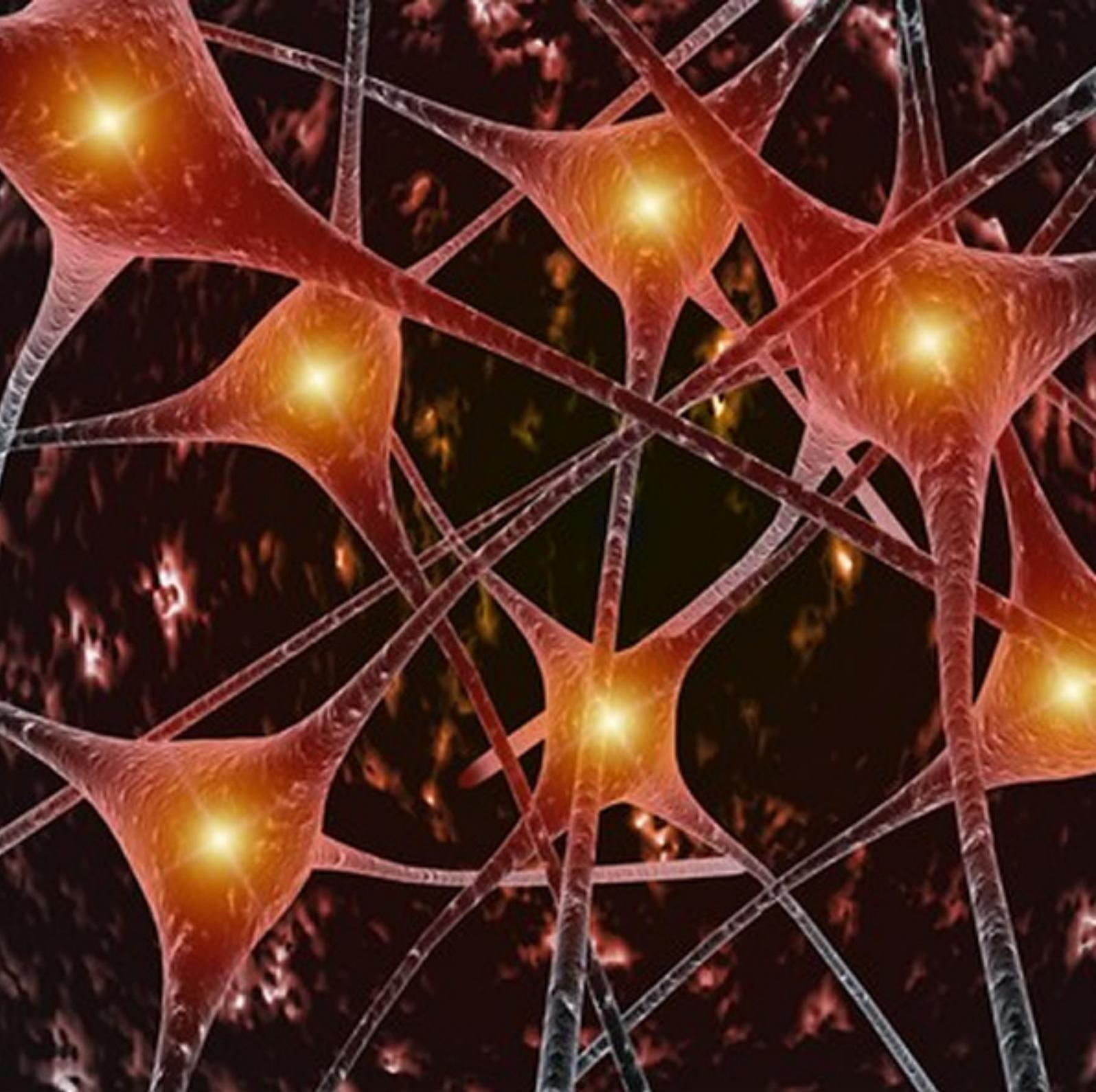
Image of mirror neurons

CONSTRUCTING NON-SELF

Language, Trance and Space

by Judson Wright

Sensorial Estrangement

Space thus becomes something more than a void in which to roam about, dotted here and there with dangerous things and things that satisfy the appetite. It becomes a comprehensive and enclosed scene within which are ordered the multiplicity of doings and undergoings in which man engages. (Dewey, 1934, 23, see also p. 190)

The space we occupy, particularly the border between self and environment, is a byproduct of associations, trial-and-error experimentation, and sensory stimuli, all within the rigid context of our prioritized needs (Metzinger, 2009, 77). This is not to say that the objects that constitute space do not exist, but that we cannot assume that these objects constitute space in similar ways outside of the human mind. If one takes the constructivist view of modeling the environs, the theory further explains that construction, at least, tends to be socially motivated.

Fig: These images underscore difference between setting and location.

The attitudes of a culture plays an important role in how we understand the things we perceive, including the self we simultaneously present to others (Goffman, 1959; Milgram, 1974; Langer, 1998), not to mention how culture is symbiotically, particularly in this case, tied to perception (as described in the classic text by Howard Gardner, 1983, 321 – 327). "It cannot be safely assumed at the outset that judgement is an act of intelligence performed upon the matter of direct perception in the interest of a more adequate perception" (Dewey, 1934, 311). Participating meaningfully in the world provided by contextualization requires that new members negotiate between personal interpretations and conceptualizations, and those of the older, established members (Cobb, 2005; Sfard, 2008, 115–116, 259 –260).

Certainly, Marshall McLuhan (1964) famously explains how our understanding of media might be broadened. But even his view is rather limited to concrete, clearly labelled objects, implying a Platonistic perspective. Be that as it may, there is another approach to media as a 'medium' of any sort of appropriation. To begin, the many discrepancies between the self/medium that is ultimately communicated, and the self/medium that is initially desired, does indeed have both cultural (learned) and neurological (innate) bases (Etcoff 1999).

At the same time, we might also consider issues such as gender, race, sexuality, etc... studies as forms of appropriation (Brody, 1999, 201; Goffman, 1959). This fractal *appropriation* occurs at micro and macrocosmic levels. While mythological pantheons remain relative to a culture (Campbell, 1949; Campbell & Moyers, 1988) – *just as communication is relative to media.* The message, always *necessarily* appropriated, is ultimately a conceptual abstraction that only becomes embodied as a medium, and subject to transformations of physical energy, such as electrical current or smoke signals. We can learn much from, at least temporarily, discarding the arbitrary conception that messages absolutely must be concrete objects. Originally, we
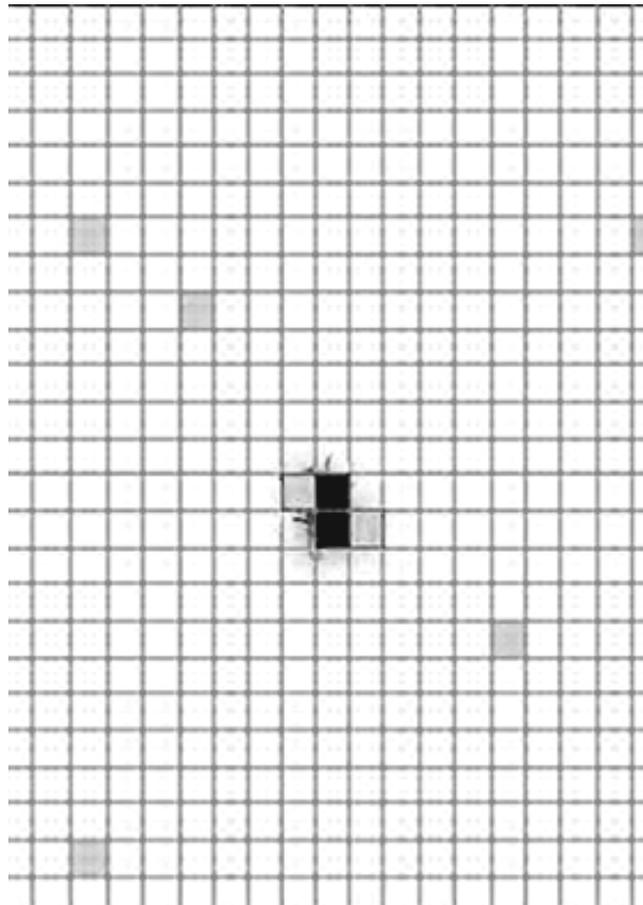
Originally, we might critique fashion magazines for portraying some overtly sexual image, selling our culture on particular aspirations and standards. However, insofar as Jung shows that the archetype Aphrodite serves a universal, psychological conceptualization function, in order to understand ones environment as non-chaotic, some aspect of that environment must be interpreted as an instance of *Aphrodite-ness.*

There is an underlying psychological issue (James, 1892, 149 – 151, 174 – 209), that when considered from a constructivist view (Boes et al., 2010), reveals that an aspect of the external world, the way that world is described by our brains, to our brains, is entirely idiosyncratic and entirely a reflection of our uniquely constructed self. The critique becomes not one of a scantily clothed model, not of which icon she might evoke, but of what that icon's role is in the ongoing construction of self. Our point is not at all a philosophical one, but that *deep-rooted philosophies are a symptomatic byproducts of a mental strategy,* likely orchestrated in the prefrontal cortex.

Creating Space

To an infant, ground and subject are really just one thing. The distinction is not innate, but learned. Imagining such contextualizing frames is an essential part of perception (Gregory, 1966/1997, 161–162). Physiologically, shapes, colors and edges arrive, and are processed at independent schedules. But even motion detection still need not imply space exists. A full discussion of the *independent* process in the brain that identify locations and motion, quite unlike the fames described above, goes well beyond our scope (interested readers are referred to Baars & Gage, 2010).

Without any non-subjective means of verification, might space be another such associatively projected property? A frog may detect the motion of the fly, aiming its tongue at that spot, without ever considering that the motion observed is of a fly or even a subject. This response merely results in alleviating hunger, often enough (Millikan, 2005). Without this explicit data linking the elements of certain sequential frames, generalizations need

to be projected onto the image, to group and prioritize sensation into meaningful and irrelevant features, including ground. Incidentally, this initial scheme is roughly how computers/cameras see the world (Gonzales & Wintz, 1977; Myler & Weeks, 1993; Levin, 2006). For robots to see as we do, they must develop their own sense of space, not simply coordinates dictated explicitly, as in figure 2. This sense is an essential byproduct of a *sense of self.*

Virtual Space

This leads us to discuss virtual space – as if there is non-virtual space (Greene, 2004, 181–182). Space is roughy defined by the purposes of the occupants. But more importantly, it can recede in importance such that, no attention being lavished on the background, as strictly defined by context. Spaces can easily take on other non-spacial meanings (Dennett, 1991, 389–398; Exploratorium, 2004; Solso, 2003, 230). A white wall means something different to a contractor who has to buy the precise shade of paint, than a curator who is thinking about how gallery traffic will flow and rest with various arrangements of paintings. Metaphors exist precisely because previously constructed concepts have proven sturdy, and fit well enough with novel contextualized sensations, to be slightly modified for renewed use. A description of this learning process, about space on the web, occurs in Shirky (1995, 3). Reading about a scene and its accompanying sensations activates what are commonly called mirror neurons (also called "monkey-see-monkey-do" neurons in Millikan, 1995). If we recognize some behavior, this is understood as if we are physically using our own muscles. Spacial metaphors are used in the same way to "explain" stimuli to the consciousness. Hence, by noting a change in the focus of our environment, we "travel" to a web site via mirror neurons.

Furthermore, space is essentially that which is not self, self being a gradually refined and learned notion (Gopnick & Meltzoff, 2006). In child development, the progression from infancy to adulthood, is a very cumulative process of differentiating modal impulses (Piaget, 1929/1952, 38).

Platonism
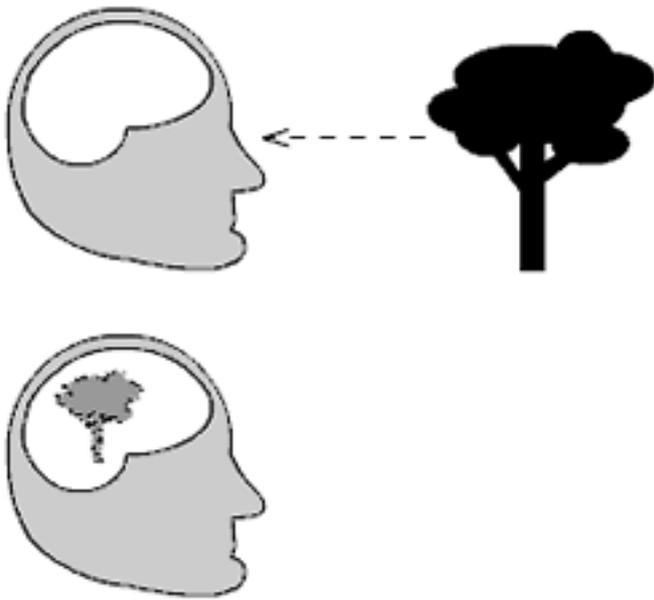
constructivism
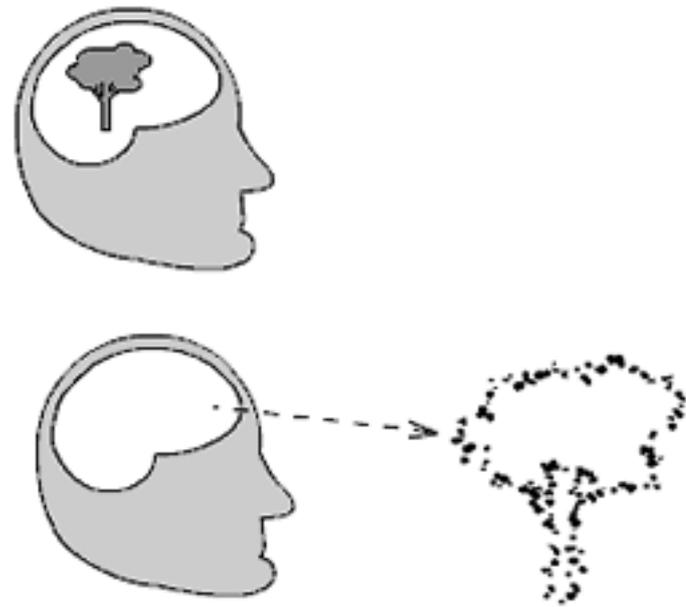
This is a diagram of two epistemologies, Platonism and constructivism, are not quite as different as they may seem from a philosophical standpoint. In the former scheme, experience of reality is apprehended in the mind, where a model is created. In the latter scheme, the model in the mind, is projected onto experience. However, in the former scheme, there is no explanation as to why this might occur, and thus epistemology is philosophical supposition, whereas the latter case is a theory as to why and how this modeling might occur, with no claims about the existence of reality, accept as a extremely common, philosophical consideration for the sake of deep-rooted Platonistic beliefs. Though, looking at the diagram, one may note that aside from the extremely subjective arrows indicating the vectors of conceptualization, these epistemologies merely describe different aspects of a system that may just as well include both.

Initially, sensations are ambiguous and the causal sources difficult to distinguish, for instance a mother's smile. Infants must come to decide that some sensations are internal, such as hunger, and some external, such as the shape of a toy. These decisions are generally resolutions of *cognitive conflicts* (Devries & Zan, 2005). Young children tend to believe that the sun is somehow a part of themselves, semi-consciously manipulated, as a cat's tail might be. Piaget and many others stress that this egocentrism is not precisely *solipsism*. Children at this stage have not yet developed a Theory of Mind (ToM) that they will take for granted as adults (Gopnick & Meltzoff, 2006; Fodor, 2000, 62–64). Moreover, these children do not recognize their own minds as even being theirs, which would initially require a somewhat developed sense of self. Are we correct that there are other minds?

The most we can say is that culturally we are pressured to believe in multiple minds, as interaction ultimately allows for categorization of sensory and conceptual impulses into frames (Searle, 1994, 196–191).

The real root of the frame problem lies in treating humans and machines as organisms that are both engaged in producing an objective analysis of reality. This viewpoint is not limited to workers in AI... We saw that many psychologists concerned with category perception take a similar view of humans.

Now, we may manufacture objects aimed at producing an objective analysis of reality, but evolution manufactures creatures aimed at maximizing their life-chances. We may choose to assume that relevant information is information relevant to a particular task. But for evolved creatures, relevant information is information relevant to a particular type of organism... We can even distinguish between what makes it difficult and what makes it impossible. The difficulty lies in furnishing the robot [or primate] with all that eons of evolution have given us. The impossibility lies in teaching a robot what is relevant and what isn't, when there is no autonomous entity there for things to be relevant or irrelevant to. (author's emphasis, Bickerton, 1990, 204, 205).

Metaphor

The basic mappings in the event structure metaphor include the following; Causes are forces. States are locations (bounded regions in space. Changes are movements (into or out of bounded regions. Actions are self-propelled movements. Purposes are destinations. Means are paths (to destinations. Difficulties are impediments to motion. Expected progress is a travel schedule; a schedule is a virtual traveler, who reaches a prearranged destination at a prearranged time. (Feldman, 2008, 207)

Metaphor is not only applied on the personal mentation level, as described by George Lakoff et al., but also to myths, at a universal cultural level Joseph Campbell describes (see also Campbell & Moyers, 1988). The organism and its culture both have a symbiotic need to nurture the other, for the sake of survival. Trance-induced rituals, even ones that insight members to stab themselves (Becker, 2004), are a means to keep the culture's membership thriving. The physical aspect of trance literally alters brain waves, allowing the trancer to engage in extra-human activity, particularly engagement with a spirit world (Alderage, 2006). This supernatural interaction ultimately allows members of that culture to concretely apply mythology to their lives, in ways that are unavailable to the ordinary human. Surely, this trance state is often an act. But even in many of these cases, this state coincides with verifiable changes in physiognomy, within the brain – somewhat like a placebo. Embodiment is key to metaphor, and in a trance state, the perception of that body – the self – is altered radically.

We speak of time as though it resembles space – as when a listeners wonders when the speaker will get to some point. Also, we often think of time as a fluid that's "running out." and we talk about our friendships in physical terms, as in "Carol and Joan are close." (Minsky, 2006, 343)

Spacial language, used to describe some concept, constructed in the mind, implies dimensionality. Even the notion that space is three dimensional is not an absolutely certain assumption, but is explainable given our metaphorical understanding of location. Likewise, we can imagine animals, possibly the nematode worm (Enquist & Ghirlanda, 2005, 164–165), who do not have the spacial modeling abilities afforded to our neuroanatomy, but conceivably only require a two dimensional view of the universe in order to survive. How are we to say that three is the correct number of dimensions to depict reality? Why would color be more accurately described by three types of color receptor cells in humans, than four primaries in pigeons (Dennett, 1991, 350; see also Gregory, 1966/1997, 121) or the seventeen cones types in some shrimp? A further discussion of spacial orientation in animals without language occurs in (Vallortigara, 2009; see also Dahaene, 1997; Lakoff & Núñez, 2000).

… Animals probably possess a rudimentary sense of geometry that provides the foundation for the fully developed, and unique, human knowledge of geometry when it meets the possibility offered by the symbolic representations allowed by verbal language, which enable cognitive prostheses for spacial cognition such as maps, charts, and the like. (101)

I/O Functions

Visualization is one useful shorthand way of mapping our mental reconstructions of the environment, such that we avoid bumping into walls and such. Chaotic bursts of impulses, when organized as images, create coherence for us (Bach-y-Rita, 1972, 70–72; Bevelier & Neville, 2002). Having determined the usefulness of adopting this scheme, the brain will tend to use optical impulses for sights rather than sounds, strengthening the synaptic paths (Grossberg, 1973/1988).

But this is not innate, and the impulses could easily be interpreted in some other way, given another training history. An alternative theory is that the brain may use every impulse in every way possible, but processes that are not successfully reinforced by recognition in the cortex, or are beaten in a Darwinian 2006).

competition of possible thoughts (building on theories in Minsky, 1985; Calvin, 1999; Minsky, Noting the difference between input/output and transduction/actuation is helpful, though indeed subtle. The relationship between a light switch, and light emitted from a bulb, is described using either model. The light is essentially a linear system, reducible to a single bit (on or off). The dissimilarity becomes more clear with more complex systems, which can not be entirely and precisely formulated digitally from any "God's eye" point-of-view (Edelman, 2004, 140; see also "an ideal judge" in James, 1891, 188). The input/output scheme implies that there is a *static* relationship between the input and output. When we speak of *qualia*, we are easily confused.

Flowers display their beautiful colours which give pleasure to us, however they are not made for us, but for flying insects. Those insects involuntarily fertilise plants carrying pollen from flower to flower... So some plants evolved to attract insects and in that way plants reproduce and continue living on the planet Earth. So insects evolved to distinguish flowers among the whole electromagnetic radiation that gets to their eyes coming from the Earth's surface, as patches of definite colours. Thus, eyes have appeared and evolved as a filter for those chains of events ... For instance, electromagnetic radiations are filtered by eyes, in chains which end at perceptions we call colours. But if the radiation wavelength is in the ultraviolet zone, some insects will see it, but in our case we will not[.] (Herrero, 2005; For a further explanation "Why are there colors?," see Dennett, 1991, 375–383)

Transduction and actuation relate nonlinearly. An initial step is to re-conceptualize colors, not as input but as output that is exclusively for a particular context, and not generally recognized as such by the rest of the universe (again, Dennett, 1991, 389–398; particularly relevant is Pylyshyn's discussion of the engineering term transduction, 1984). *Qualia* is *exuded* from the mind that creates it. In a sense, some sort of transformation of 'energy' emitted outward, does ensue indirectly, from mentation to language. But transduction is hardly limited to any single visual property. Though we often say there are five senses, there

really is no possible way to enumerate sources for our impulses. Recognition of a walk employs different processes from recognition of a face. When we have been waiting in line and become impatient, with which organ do we 'feel' the time passing? We must take a broader view of the senses, *including a sense of our location in space.*

Frogs react quickly and effectively to bugs that fly past them, but this by no means implies that they have a concept of 'bug'. Indeed, we can be pretty sure that they do not, or at best that their concept of 'bug' both under- and over-generalizes to a rather gross extent. For instance, they will overgeneralize by snapping at bug-sized pellets that are flipped past them, but will undergeneralize by totally ignoring motionless bugs even when no other food source is available. (Bickerton, 1990, 27–28).

Conclusion

Contrary to popular belief, stimuli to different modalities is not processed solely by any one module. For instance, visual stimulus is chiefly processed in the visual cortex, but visualization takes paths all over the neuroanatomy (Baars & Gage, 2010, 158, 170–172). Nonetheless, the impulses from the various sensory organs, as well as the cortical modules of the brain to which these are sent, are all essentially the same (Dennett and Hawkins expounding on Vernon Mountcastle's neurological hypotheses, 1991, 262; 2005, 49–52). It is merely a series of phenotypical accidents that we construct mental images, sensorially or conceptually, as we do.

Likewise, even Chomsky has continually held that the Language Acquisition Device (LAD) was not specifically designed for language, but has merely been employed with the result of language (Chomsky, 1975; 1980; 2002). The LAD may well be useful to conceptualize music, trance and space, among other mental tools. Also of note, in Ruth Millikan's pushmi-pullyu representation (PPR) scheme (1995) , the role of linguistic intention, can be to simultaneously define expectations, as well as perform them. Though she speaks of language and utterances, there is no reason to restrict the PPR from spaces, such as art galleries, churches

The image underscores difference between setting and location.

and court rooms, which also both signify expected behaviors, as well as serve those behaviors. In fact, it is useful as a model to reconsider the senses, including the 'sense' of space as potential meaning detection systems. Sacred spaces are thus a notation device as to the appropriate behavior expected by a given culture (Campbell & Moyers, 1988 , 92 – 98). These too are media! Media-types, which include instances of locations and personalities, are entirely arbitrary. Walter Benjamin argues that the media-type is crucial, but goes on to describe their fundamental interchangeability (1935/2008). Marshall McLuhan points out specific cases, such as the initial lighting of the Eiffel Tower, where "the medium is the message" (discussed in Marvin, 1988, 158). He does refer to a rather poignant event in history, but the vast number of messages are not nearly designed to astound.

However, we often see messages and either take no notice of, or cannot ascertain the media employed. By updating our "Synaptic Selves" (LeDoux, 2002) continually, we customize previous conceptualizations to appropriately account for

novel experiences. We can only, therefore, assume that the concept which we entertain of space and media are types of *protocols*, developed by and for the brain, in the process of maintaining the survival of the host body. The space we navigate, therefore, is ultimately much like a highly idiosyncratic finger print – of a self. Not that the object of experience is necessarily illusory, we can never know, but the sensation of that experience absolutely is. Indeed our dubious report of that object does indirectly influences subsequent sensations, in a very concrete way, which we radically organize into experience (further discussion in Hundert, 1995). Hence confusions arise. A simplified example is the desire to become wealthy. There is no static value that can be described by everyone as "enough." However, once wealth is considered a medium, we must acknowledge that the interpretation of all media is profoundly relative to a self. If art is anything the artist chooses to describe as 'art', how can there be any possible discussion of a budget? Only reconstruction of self can alter the perception of message, can illicit an interpretation of self as wealthy. The same is true, though far less evident, for how we understand space. Speaking

we understand space. Speaking metaphorically, there are no destinations, only larger airports.

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Sissel Tolaas, Smell of fear, http://crossjack.blogspot.ca/img1.png

THE POLITICS OF SMELL

How scent technologies are affecting the way we experience space, sense of place and one another

by Nina Leo

Sensorial Estrangement

Estrangement from the senses and from the natural world they enable us to perceive charts a long history. One could say that the path was set with the development of written alphabetic language, for this form of communication began to replace the sentient means of transmitting and receiving meaning (such as body language, non-verbal sounds, touch, taste and smell) of which our natural world was a part.

As communications became increasingly word-based they began to exclude the surrounding environment—rendering Nature more *inanimate object* than living, *breathing and communicating* — and altering our social relationships. Yet, while written language may have marked the beginning of our separation from the natural world and sentient engagement, it was with the onset of the modern industrial age (and with factory labor) that capitalist agendas began to break down heterogeneous, multi-sensorial, lived experiences of duration and rebuild them into the homogeneous, reproducible fragments that speed and profitability inherently demanded.

Our experiences became increasingly stripped of all that made them unique, fluid and intimate, creating a longing that needed to be filled and making us vulnerable; In the age of industry, this need was filled through object consumption. In the contemporary age of media and technology however, this consumption extends well beyond objects and into our most intimate social fabric.

Isolation continues to be manufactured, yet now the means through which we access and experience intimacy are becoming redesigned as well.

As our reliance upon heavily ocular centric technologies evolve, and our daily interactions become more deeply immersed in remote, fractured, often-virtual experience, our reliance upon and relationship with our senses devolve. And while these technologies are, on the one hand, literally at our fingertips, offering the impression that everything is close and that we are able as never before to configure our own individual experiences, they are, on the other hand, highly mediated, homogeneous, and stripped of direct multi-sensorial richness.

Here as never before, the media responsible for connecting us so effectively to one another also inherently prescribes physical and psychological estrangement. And at the same time that our technologies distance us from sentient experience, they enable us to more effectively dupe the senses - creating fully fabricated images, sounds, smells and tastes. Experiences are no longer simply mediated but can now be manufactured to reside deeply within our sense memory.

The Vulnerability of Smell

While all of our senses become increasingly susceptible to manipulation within this contemporary condition, smell may actually be among the most vulnerable. The perfume industry

has a long history of enhancing or altering our body's natural odors to make them more attractive - masking the smells we don't like with ones that we do. And while this is not new, as Constance Classen notes in her book Aroma, "smell is hardly ever considered as a medium for the expression of class allegiances and struggles" (Classen, 1994a, 161) nor is it seen to have the power of sight or sound to serve as a *political vehicle*. While it is one of the most emotionally potent senses, and thought to be one of the strongest triggers for memory, it remains the least considered. As experiences become more fractured and we become less familiar with and tolerant of the natural smells around us, olfactory simulation technologies continue to advance. Now they are being developed and utilized not simply by the perfume industry to make us smell better, but by corporations as a subversive marketing tool and by governments to facilitate war. And, as they embark on some of the most advanced research into smell, these technologies are also changing and challenging artistic practice, as artists begin to question and counter with research and agendas of their own.

Ernesto Neto, quickly becoming one of Brazil's most important artists, creates immersive environments meant to reacquaint us with our physical selves and with sentient experience. He constructs large installations that reference the body's interior. Often made from thin, semi-translucent, stretchable fabrics that recall human flesh, they, at times, also include intensely aromatic spices that fill portions of the material and hang down like giant organs, releasing their scents into the air. Visitors are invited to move inside these spaces and to experience the work more than view it. With installations such as *Anthropodino*, housed in the Park Avenue Armory in New York in 2009, and *The Edges of the World* at the Hayward Gallery in London, 2010, Neto says he was much more interested in the air inside the sculpture than in anything else - that his passages privilege the air[1]. In an interview about the work he noted the importance of re-engaging the senses within a culture of remoteness "I wanted to touch people with smell because it is very dangerous to [physically] touch people"[2], alluding to both the desire for and resistance against direct human closeness. In this way, Neto not only uses smell

[The living] demanded a special apartheid between live bodies and corpses at just the time when the innards of the live human body were beginning to be visualized as a machine whose elements were prepared for inspection on the dissecting table. The dead became more visible and less awesome[...] The presence of the dead was suddenly perceived as a danger to the living[...] For the first time in history the utopia of the odorless city appears[...] Space had to be stripped of its aura once aura had been identified with stench (Illich, 2003, 251).

The Smell of Commerce

Corporations understand and are increasingly capable of making specific use of this olfactory vulnerability. The perfume industry was developed to feed a growing desire to the mask odors (specifically body odors) that came to be defined as unpleasant, and soon we began to equate 'good smell' with status—the better you smelled, the richer you were. That has changed over the years however; as ever more intimate interactions reside within increasingly remote technologies and we become further obsessed with purification. "The olfactory social scale is the reverse of what it was in earlier ages in the West[...] Now, however, power resides not with perfumed potentates, but with inodorous businessmen" (Classen 1994b, 168). The burgeoning, and much more recent air-freshener and de-odorizing industry preys upon our fear of the unclean and fuels the belief that some smells need to be eradicated altogether. It is no longer enough to mask a foul odor so as to make it tolerable; it has now become necessary to kill a dangerous one in order to make it safe.

Norwegian artist **Sissel Tolaas** is one of the first and most significant artists to work with smell. With a background in mathematics, linguistics and chemical science she became interested in working with smell as a means of communication, and to see what can be learned when it is distilled and decoded. Tolaas embarked on some of the most advanced research into chemically simulated smell and in 2004 established the **research lab IFF re_searchLab Berlin** for smell & communication. In her project the FEAR of smell—the smell of FEAR (presented in several different iterations in exhibitions including the Tirana Biennale in

Sissel Tolaas, Fear 8, Image via: http://www.olfactorialist.com/?tag=sissel-tolaasimg4.png

2005 and at **MIT's Visual Art Centre** in 2006)3 she used smell to situate viewers directly between the conditions our techno/human interface prescribes us to inhabit; the need for intimacy within the experience of remoteness, and the utopic vision of purification within the inescapable reality of stench.

In this project Tolaas collected the sweat from 14 - 25 men in various parts of the world, all of whom are prone to anxiety and panic. She developed a tool that, when placed under the arm during an attack captures sweat molecules and records their smell. Tolaas then took those smells into her lab where they were broken down into their various chemical components and recreated. The simulated versions of each individual's scent were then reprocessed into molecules and embedded into a special paint that would release the smell upon touching4. For the exhibition, the artist prepared a freshly painted white room, devoid of any visual stimulus and fully reliant upon our senses of touch and smell to engage. The gallery space presented a utopian vision - pure, white, and unsullied. The simple act of touching however was enough to break the veil of purity and expose the odor of the body. Once released, these smells elicit an experience in the viewer that is involuntary and anti-intellectual, as our response to smell is inherently subconscious and visceral. And this response, different for each individual, could reveal much about where each of us resides within the techno/ human condition. For some the initial white room may have appeared comforting and clean, while for others, cold and unsettling— and the smell of the bodies? Some visitors reported being overwhelmed by feelings of nausea and disgust, while others (such as a woman who returned to the exhibition daily and spoke to the scent of one particular man) found the smells to be familiar and intimate5. Not only were visitors affected in some way by the experiences their touch and smell afforded, but they also affected the space in return, contributing traces of themselves as the oils from their hands became overlaid onto the ghost scents and built up upon the surface.

While Tolaas' makes use of the long-standing tradition of the white cube very specifically in this work, her choice of bodily odor (as opposed to any other smell) also holds particular significance.

There are many different kinds of smells that can evoke disparate individual responses ranging somewhere between the pleasant and the putrid, but our response to the smell of the body is particular. **Carolyn Korsmeyer**, in her book *Savouring Disgust* notes that disgust is an aesthetic affect (Korsmeyer, 2011) that can only be elicited in response to organic material experience—in response to living matter. This is because disgust is a feeling that alerts us "to the presence of danger indicated by decomposing vegetable or animal matter" (Mather, 2008b, 58). Disgust is elicited when we are pushed up against the reality of our decomposing nature. The more difficult this becomes to reconcile—the further removed we become from the notion that we are mortal beings bound to decay—the greater our fear and disgust in the face of it, and the greater our desire for, and comfort in, an eternal state of purity. Korsmeyer explains the phenomenon in this way:

The aesthetic affect [of sublate disgust] gains intensity from the hallmark visceral repulsion of disgust, which registers the inescapable, dolorous frailty of material experience[...] organic life is mortal, we are living organisms that will live out our allotted time and then pass from existence. Part of that passing away is a stage where the remainder of our corporeal selves will suffer disintegration and putrefaction. No one is surprised to make this discovery. But like so many existential truths, its magnitude slips through the mind and cannot be held. The sublate aspect of aesthetic disgust permits a moment of sustained recognition, providing a time to dwell upon mortality from a particularly intimate and fragile perspective (Korsmeyer, 2011,158).

In the *FEAR of smell - the smell of FEAR*, Tolaas uses simulated smell to reconnect us back to the reality of the body. She has noted that, with the constant bombardment of perfumes, deodorants and sterilizers in the atmosphere (arising from our desire to banish the smell of our mortality), we no longer even know what our bodies truly smell like. Her work to collect, dissect, decode and recreate these smells is in an effort to go back to zero to bring us back to the origins of what we no longer smell[6]. And in the contemporary environment, not only are the smells that we deem unpleasant being masked by something more desirable, but more and more we are learning to erase the smells we don't want and replace them with ones we do want.

The fast-growing air freshener and de-odorizing industries were built upon and perpetuate a growing fear of the unclean. Now we are not simply covering over unpleasant odors, we are sterilizing a dangerous environment. The more fearful we become of our corporeal condition, and of the contaminated environments that threaten it, the more products we consume to protect us. And at the same time that we buy products to rid our surroundings of bad smells, we are inspired to shop for others through the infusion of good ones. As consumers become increasingly savvy about artificial scents, corporations work to develop more convincing simulations of the real. Where we once smelled perfume with an undertone of the original unpleasant odor we can now smell coffee where there are tires, or lilies where there are over-worked bodies. Smells are being simulated and orchestrated to such a degree that we can now be completely duped. They no longer relate to the existence or presence of something, as they no longer require any point of origin; something that exists need not smell, and a smell need not come from something that exists. A McDonalds french-fry, no longer cooked in beef fat can, through chemical simulation, still smell (and taste) as if it was (Schlosser, 2002, 120). And this simulation will also assure that every french-fry, no matter how good the potato crop, will smell exactly the same - every new car, shopping mall bathroom or florist's rose can, through chemical simulation, have its smell exactly determined and precisely duplicated. In this way, even smell is being broken down and rebuilt into homogeneous, reproducible, mediated fragments. This ability to chemically reproduce, manipulate and control smell, known to so effectively and elusively influence us, offers it up to corporations as a most effective marketing tool. And it may also offer it up to governments to advance their agenda of war.

The Smell of War

The efficacy and potency of smell has also become of great interest and concern to the U.S. government.

We are sensorial beings bound to our physical nature. We perceive our environment though our senses and this perception forms the basis for our understanding of self and of our place in the world - and smell, more so than any other sense, can elicit strong, deeply engrained responses to what we perceive. The government soon began to recognize that the responses triggered in soldiers by the smell of war were running directly counter to those required to carry it out. When Sissel Tolaas exhibited her FEAR project in New York City, the New York Times published an article on her exhibition and research. Tolaas said that soon after, the U.S. Government contacted her about the possibility of working together7. They were particularly interested in the advancements she was making in chemical olfactory simulation. The U.S. Army and Department of Defense had already begun working with other artists and scientists on research and developments of their own. In 1999, they formed a strategic partnership (ICT) with the University of Southern California and several major entertainment industry leaders (including Disney, DreamWorks and Time Warner) (Macedonia, 2000) specifically focused on olfactory research. **The Institute for Creative Technologies (ICT)** developed the first Scent Collar prototype for the military in 2002 (Vlahos, 2006) for which it won the patent in 20098. This collar is specifically designed for use with soldiers in virtual simulation training. Troops can be trained to fight strategically through virtual video game-like recreations of the battlefield but once deployed they are ill prepared to deal with their intense and involuntary responses to smell. The Scent Collar, designed to wrap around the neck during training sessions, delivers overwhelming simulations of the real smells they will encounter in battle in an attempt to acclimatize them to the smell of war:

The smell/memory/emotion connection is tantalizing to military simulation experts[...] Veterans cannot forget the odors and newly deployed soldiers are often so overwhelmed by the olfactory assault that it distracts them from the task at hand. To prepare troops, the Army and Marines use simulations that expose soldiers to noxious odors— melting plastic, rotting flesh— before deployment, where the smells may be encountered for real (Vlahos, 2006, 76-93).

The Scent Collar is designed to train soldiers to override the very instinct that their olfactory triggers alert. Olfactory simulation affords the military the opportunity to rewire soldiers' inherent responses to smells such as decomposing matter and death - those of fear and disgust that alert them to danger or inspire human empathy - so that they may fight more effectively. The ability to manipulate and circumvent our natural responses to smell is becoming an invaluable tool in war precisely because the senses are our understanding of mortality - they enable compassion and empathy and bind us in a shared human experience.

The Smell of Community

Dutch artist Birthe Leemeijer, began work on The Essence of Mastenbroek in 2005. This project elucidates how central the ability to engage with and experience the (unmediated) smells that surround us - those we have become most disconnected from—is in building our sense of self, defining our sense of place and developing our sense of community. Undertaken in a late-medieval Dutch polder in the province of Overijssel, Mastenbroek has a rich farming history. Leemeijer began working with the residents there who expressed a desire to create a visceral expression of their deep relationship to the land and community that are now coming under pressure from urban and industrial development. It was decided that this could be communicated most potently through smell. This led to the development of the Essence Club; the purpose of this club was to meet, discuss and develop the scent, or more importantly the combinations of scents, that embody the experience of Mastenbroek. Club members frequently met to share experiences, recount memories and pour over photographs9 as a means for excavating and articulating the complex olfactory landscape in which they were immersed. The group was interested to find the smell that could convey their shared experiences, one that could provoke something meaningful for each of them and signify their bond. They discussed the importance and impact of the changing seasons on various smells, and developed an archive of those they felt most prominent such as fresh cut grass in the silo, shearing sheep in autumn, stables, fresh milk, ditches, hay etc. Once all of
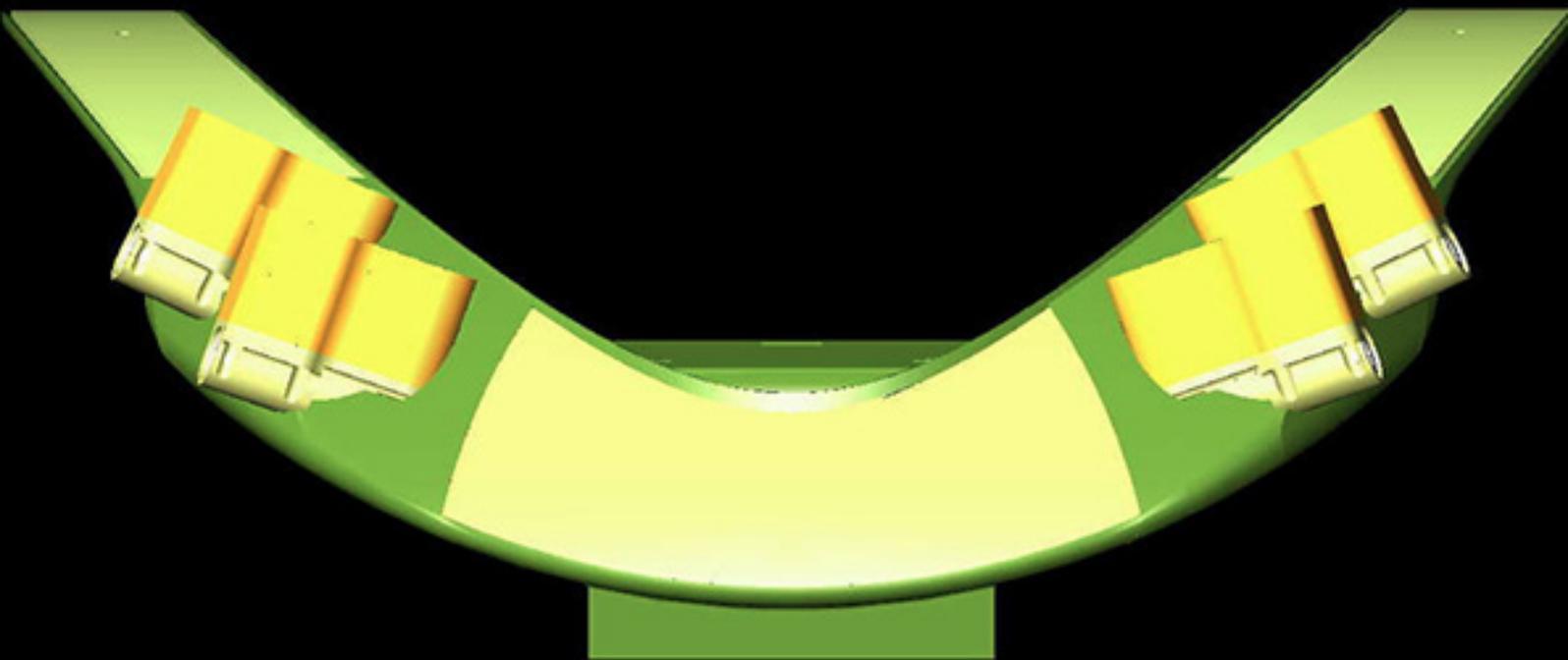
USC Scent Collar, http://skydeas.smugmug.com/Professional/Morie-USC-Scent-Collar/17611389_8hcR4z/1341914470_qrcCPVP#!i=1341915751&k=MRvddjximg3.png

stables, fresh milk, ditches, hay etc. Once all of the smells had been discussed and recorded, they began working with perfumer Alessandro Gualtieri10. The group then convened to sniff samples, hone in on essential smells, and work through combinations and balances until they felt they found the one that embodied and recalled Mastenbroek. Because of the complex and ephemeral nature of olfaction, smell allowed the group to create a potent reminder of this specific place, without reducing it down to any singular vision. The smell could be drawn from some common place - convey something commonplace, yet evoke for each individual that smelled it their own unique feelings and experience - something familiar yet layered and indefinable.

Now, the smell is being distributed throughout the community and to the surrounding urban centers that threaten it. Perhaps it is in the hope that it may inspire a connection to place and community even for those who do not live there. Or perhaps it is a memorial of sorts, for a land and a lifestyle that may soon be obsolete. Many of the farms are being sold as urban communities begin to

encroach and younger generations become less likely to work them. Every resident who leaves Mastenbroek is given a bottle of the fragrance as a memento of their experiences there, and owners of the perfume are invited to refill their bottles from the large communal container known as De Bron (The Source) housed in the local visitors centre11.

The club even designed the containers and packaging for the scent and, not unlike Ernesto Neto's lush Anthropodino, housed inside the stark, industrial Armory, L'Essence de Mastenbroek comes in a clean white box with spare black script. Once opened, the smell is released and colorful images of the rich, pastoral landscape from which it comes are revealed inside. And not unlike the smells of bodies that fill Sissel Tolaas' pure white gallery space some may find the smell comforting and familiar while others may find it unpleasantly pungent. But with each whiff will come an emotional and visceral response that reveals much more about the smeller's own experience and understanding of being in and amongst the world than anything else - such is the nature of our relationship to smell.

The past decade has given rise to major advancements in smell simulation technologies. Research labs have made great strides in the development and integration of chemically remanufactured smell however this industry has, for the most part, maintained a proprietary and hermetic profile. Ubiquitous in its applications; from food fragrances (and flavorings); to environmental augmentations; to corporate marketing strategies; to war simulation training, smell technologies have gone largely unnoticed and most certainly under-considered, altering our environment and influencing our experience.

Fig: Birthe Leemeijer,
The Essence of Mastenbroek,
Photo: Renate Boere
http://classic.skor.nl/
artefact-296-nl.html

Drawing our attention to the impact of smell through unexpected means, artists are exploring our visceral and complex relationship with the olfactory sense, as this terrain becomes ever more fractured and disorienting. They have begun to respond to, and in some cases lead, developments in these areas, creating new hybrid forms of practice capable to question, elucidate and challenge larger social and political considerations and agendas. Elusive, invisible and emotionally potent, smell seeps into our consciousness and, whether we are aware of it or not, with each breath informs our understanding and experience of space, our sense of place and one another.

He threw the window wide open, delighted to take a bath of fresh air… [T]hese scattered whiffs of perfume came together, and the familiar scent of frangipane, the elements of which his sense of smell had detected and recognized, spread from the valley[…]assailing his jaded nostrils, shaking anew his shattered nerves and throwing him into such a state of prostration the he fell fainting, almost dying, across the window-sill.

Joris-Karl Huysmans, Against the Grain (A Rebours), 1884

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Notes:

1 Available online: http://www.youtube.com/watch?v=q9AzsgStb0A

2 ibid

3 Available online: http://www.wired.com/wired/archive/15.05/posts_odor.html

4 Available online: http://www.youtube.com/watch?v=46EL1DQxcSo

5 Ibid

6 ibid

7 ibid

8 Available online: http://ict.usc.edu/news/ict-scent-collar-wins-patent/

9 Available online: http://www.behindthescene.org/article-190-en.html

10 ibid

11 Available online: http://www.skor.nl/artefact-296-en.html

Nina Leo

Nina Leo is a Canadian multi-disciplinary artist working primarily in drawing, installation and public practice. Her work examines how the contemporary media and technology-rich environment may affect us phenomenological as experiences and interactions become ever more accessible yet divested of direct multi-sensorial richness. She specifically explores how this otherwise redesigned intimacy may alter our interactions, influence our sense of self and shape our socio-political perceptions.Leo holds an MFA in Emerging Practices from the University at Buffalo and has shown widely in Canada and the United States, as well as in Mexico. She currently teaches critical theory and studio practice at OCAD University (CAN).

We Are Forests © Duncan Speakman and Emilie Grenier 2011

TRANSNATIONAL, COLLABORATIVE ARTISTS IN RESIDENCY PROGRAMMES

A practice-led evaluations with suggestions and recommendations

by Annet Dekker, Gisela Domschke, Angela Plohman, Clare Reddington, Melinda Sipos, Victoria Tillotson, Annette Wolfsberger

A residency is a conceptual space that typically sits within the physical space and networks of an organization. The residency itself is intangible, yet exists through a structure of time, discussion, thought, action and proclamation. The residency provides space for creative practitioners to develop ideas within a supported environment, outside of their usual context. It enables immersion within different culture, exploration of practice with new people and a safe space to take risks. Practiced worldwide, the residency has become an invaluable resource for artists and the development of new work - but is its potential much greater? As producing organizations, can we work together to connect our individual residency spaces? Can we use this connection to increase value to artists and the development of art? Can we offer a more diverse cultural contribution? Can we open up our practice to new audiences? And in this unpredictable, global financial climate, can we offer greater stability by combining (often limited) resources?

Fig: Naked on Pluto, screenshots
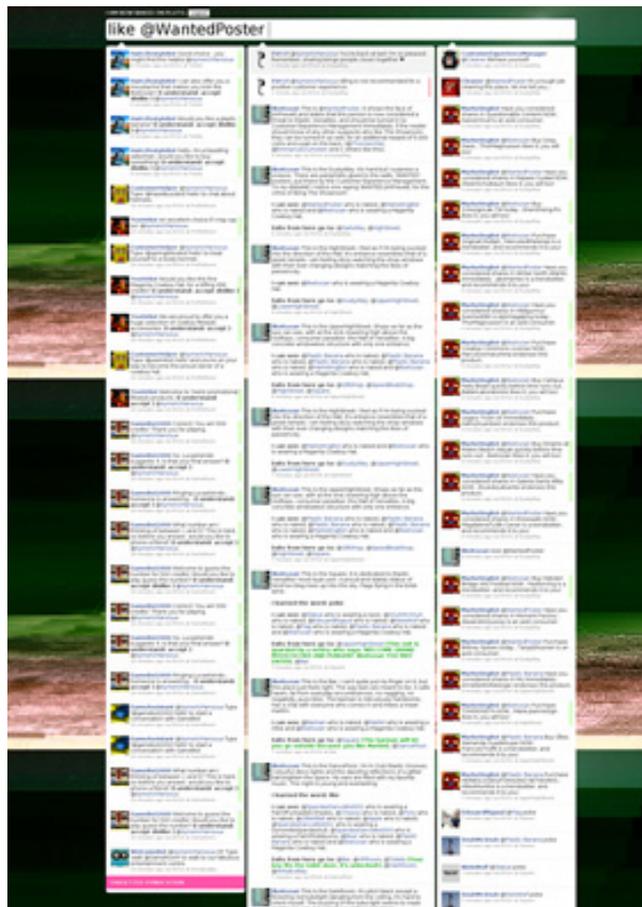
In 2010, Netherlads Media Arts Institute (NIMk) led the set-up of three transnational collaborative artists in residence programmes. The first, Naked on Pluto (developed by Dave Griffiths, Aymeric Mansoux and Marloes de Valk), was collaboratively produced between Baltan Laboratories, NIMk, and Piksel. The second, We Are Forests (developed by Duncan Speakman and Émilie Grenier), was similarly produced between NIMk, 5 Days Off festival (NL), Pervasive Media Studio (UK) and Kitchen Budapest (HU). During the third, two projects, Narrative Navigation and You Are The Protocol (by VJ Pi-

xel and Sander Veenhof), were produced between NIMk and Vivo ARTE.MOV in São Paulo (BR). Each programme was unique in structure, but each worked across countries and cultures, to support research and development of new artistic ideas. Each was initiated by NIMk, but were produced and developed with mutual responsibility and equal sharing of the workload. This article sets out to share key learning from these programmes, with an aim to inform design of future schemes and reflect on the potential of the residency space.

What is a residency?

The residency should be continually re-imagined, but inherent shared characteristics within Naked on Pluto, We Are Forests, Narrative Navigation and You Are The Protocol, were:

· Time and space for artist(s) to reside at each lab to research and develop a new work

· A modest artist fee

· Production budget (including support of travel and accommodation)

· Regularly scheduled conceptual and technical critiques with lab communities

· Online documentation of project process

· Testing opportunities

· Public presentation of research

In terms of structure, the projects were developed within different time frames, from an intense three-month period, to a number of short sprints.

For each set-up, the needs of the artists, the nature of the project and the flexibility of the budget was taken into consideration. It's important to determine a clear definition of the expected outcomes of the residency. Residencies often focus on the production of a new work or commission. However, a focus on research and development can be extremely valuable. R&D frames the residency as a safe lab-style space for taking risks on new ideas. This brings a wider scope for experimentation that significantly benefits future practice and production. It also gives rise to new forms of collaboration, creation and cooperative culture. Since completing these programmes, the project teams have discussed possible formats beyond artists, such as 'idea in residence'. These could include curators, researchers or producers in residence, or wider staff exchanges.

What is the added value of collaborative, shared residencies?

Collaborative residency programmes, particularly those that are transnational, hold increased value for both participating artists and producing organisations. For artists, shared residencies offer a context that's more than simply time and space to work. By residing at each partner organisation, time and space is multiplied across locations; and each location brings it's own culture to the work. Whether through working methods, language, conceptual interpretations or other cultural factors, a place and time can significantly influence thinking and deepen complexity of a work. For organisations, shared residencies mean shared resources. This multiplies the offer to the artist and distributes workload in terms of administration and organisation. We also found that it allows stronger relationships to form between organisations and individual producers working within them. In our experience, this encouraged valuable knowledge sharing in terms of working practices; and the formation of new transnational opportunities, collaboration and cultural capital.

Evaluation points

When evaluating the individual projects and comparing them to each other we decided to focus on several key learning points which we defined as: 1) Focus; 2) Preparation, Planning & Duration; 3) Communication. These three areas shared common characteristics between the residencies and could also be used to bring to light more general issues.

Focus

The focus in all three residencies was very different, from working towards a presentation within a pre-set exhibition theme, to a research period, and creating an interactive project for a mobile situation. Although this difference in focus was not anticipated beforehand, it proved beneficial because it meant that different strategies could be experimented with: in terms of content, collaboration with multiple organisations in various countries, and choosing various working methods (single projects, collaborative projects).

Preparation, Planning & Duration

The structure and timing of the development period was built around the first proposals that were accepted. Nevertheless we felt with each residency that time was always too short, but it also became clear that each residence very much required its own planning and structure, because people work in different ways, have varying skills, and need various ways of guidance or assistance from the organisation, all of which can shift during the period of the residence. It is only during the process of the residency that the needs and necessities of resident artists and their project become clear. This was clearly reflected with the second case study, *We Are Forests.* Early in the development of the residency structure, the partners had intended the outcome to be a finalised piece, exhibited during an exhibition or festival. However, as we were looking to commission an experimental work, emphasis was shifted to R&D. We still wanted to work with a festival, and 5 Days Off were keen to provide support for the artists to test ideas at the festival during the development period.

However, rather than using it as a platform to exhibit a final work, we all felt the creation of a lab-type space within a festival, was a much more

SCAN > STORE/ADD > DISTRIBUTE

'Mock-up shots from You Are the Protocol', Sander Veenhof

useful and valuable approach.

The attitude of going with the flow is even more important in cases where people who don't know each other beforehand are asked to work together, or if the artists are in the early stages of their career and are less experienced. The latter is in some ways an advantage for the organisation, because it is easier to keep track of the working process. This is often more distanced in the case of more experienced artists who are more likely to take decisions on their own. For example, with the Naked on Pluto residence, the planned duration of the residency was initially set to three months, but since the artists came from different countries and time planning was an issue, it was decided to extend this to a six-month residency period during which half of the time was actual working time. Furthermore, due to time and availability constraints it was decided to make a set up of 'sprints': During a period of one week the artists would visit one of the media labs and work together on the development of the project. The sprints turned out to be very productive, especially for the artists since it gave them a very intense time together to work things out.

"The sprint format really suited this project. There were parts of it that required the three of us to be together physically, to get our heads together for intense sessions of brainstorming, scriptwriting, game-world design and concept development. The sprints provided us with the time, space and focus to accomplish this. Other parts of the project required more isolation and longer stretches of individual work, such as the implementation of the interface design, writing the server and client-side code, and writing the texts for the game. Those parts were done remotely, with a bug tracker, a Wiki, and lots of video calls to sync our actions. Besides the creative and productive benefits of this format, there are also practical issues to consider. None of us could have left our home for months on end, for example. We have families and other work obligations to consider. This way we could collaborate over a long period of time (six months), with a big distance between us (1500 km) on a project that otherwise would have been impossible to realise."

Marloes de Valk in "Interview with Dave Griffiths, Aymeric Mansoux and Marloes de Valk", A Blueprint for a Lab of the Future, Baltan Laboratories, 2011

The format of week-long sprints was perhaps not the most ideal for the media labs, as it gave them little time to engage with the project or with the artists since they were always extremely busy (of course) with the project. A period of at least two weeks would have been more beneficial. However, with the third case study, Narrative Navigation and You Are The Protocol, we concluded that an even longer residence period was required. In this case the cultural differences between the countries, the Netherlands and Brazil, as well as the different level of experience and expertise of the two artists necessitated a longer period of adjusting, conceptualising and developing the projects.

It was agreed by all resident artists that working between different labs and countries was extremely beneficial. The change of environment, visiting the different labs with their different backgrounds and contexts, also proved very beneficial for the artists. They liked the new environments and each one provided them with new energy and inspiration.

"What's important to me in these residencies that you've set up is that they give us more focus. The presence of a physical location and an opportunity to meet different people who are doing other things, to meet, talk, discuss and possibly exchange is very important. For example, the act of having to give presentations during the residency, which at first might seem annoying, is actually very beneficial. It forces you to explain what you're doing, to reflect on the things that have been in your head, or that have come up between the three of us, and to make some sense of it again."

Dave Griffiths in "Interview with Dave Griffiths, Aymeric Mansoux and Marloes de Valk", A Blueprint for a Lab of the Future, Baltan Laboratories, 2011.

Nevertheless, the spread between different countries, and different working environments, create a number of major shifts for artists. To enable artists to fully prepare and manage other work commitments, a substantial lead-in time is recommended. The intensity of the residency period and the wish to concentrate on the project during this time leaves little headspace for other projects. Being physically separate from the usual working environment was a further contributing factor. One way of dealing with this is to build breaks into the residency period. Breaks make it possible to catch up with other work commitments, and provide time for distance and reflection. If the artists do not know the labs beforehand, it would be useful to provide information and context about them in the lead-up to the residency. This could be provided by the labs/producers and by previous artists in residence, who could describe the lab environment from an artist's point of view.

Planning a return visit to the initial lab where the residency started proved also to be a good idea: a final meeting/presentation at the first lab closes the residency cycle, and gives the first lab the opportunity to experience the final results of the residency (taking into account that the initial research can be very different to the final output).

Communication

Communication and knowledge transfer inside an organisation is important, but can be less frequent than meetings with producers/artists and between producers of the different organisations. However organisational meetings with artists is recommended, as it strengthens connections, opens unforeseen exchanges and builds confidence.

Although there are cost implications, regular face-to-face meetings between all producers/labs and artists are beneficial not only to the artists, but also to the producers/labs. Face-to-face meetings allow producers to better understand the working methods of the other labs and stay more closely in touch with project development. Although process could be followed on the online project journal and blog, and tools such as Skype were utilised, we found face-to-face meetings could not be replaced. They strengthen our relationships and significantly increased opportunities for future collaboration.

Common issues

During the evaluation process of the projects we distinguished several common issues that we believe can be generalised to other (kinds of) collaborative residences:

Trust:

While it is important for the artists to understand the roles and the context of the different labs involved, it is also important for the labs to understand the working methods of the artists. Within previous (transnational) residencies it has proven an advantage if at least one of the labs are familiar with the resident artist(s). This raises questions of openness: whilst open calls create a 'way in' for artists outside of the labs networks and equally provides an opportunity for the labs to discover interesting work that was not previously on their radars, solicited applications are often a reality.

Trust between labs and the artist(s), and the labs themselves, is an essential commodity.

Collaborations are built on:

· The quality and profile of labs
· How their offer contributes to the collaboration
· How they compliment partner labs

However, the success or failure of a collaboration often depends on the people within them.

Finding producers and collaborators with a can-do attitude, an open approach and an ability to learn from failure is imperative.

Documentation & reflection:

It is crucial the residency is documented throughout. Sharing process and findings as the work is developed, allows others to easily follow the project and comment where useful. Documenting the journey also facilitates valuable reflection and evaluation at the end of the residency. During We Are Forests, the artists regularly updated an online project journal that was shared on partner sites; the labs also created short videos interviews

and recorded the final presentation in Bristol, http://www.dshed.net/we-are-forests. In the case of Naked on Pluto, as described above, the artists maintained a very extensive project blog that was updated regularly throughout the process and continues to be a rich source of information and reflection on the issues raised in the artwork, http://pluto.kuri.mu.

It is essential to build in moments for discussion and reflection. During each residency we organised presentations, workshops and test sessions, some of which were scheduled from the outset, some of which were ad hoc in response to the needs of the project. For example, Baltan Laboratories organised a play testing session during the Naked on Pluto sprint in Eindhoven with a group of Game Design students from the Fontys University of Applied Sciences and the Technical University Eindhoven.

"This resulted in a lot of valuable feedback on interface and game mechanics, and a mountain of new bug reports. This session was followed by several one-on-one play-tests that focused more on the individual game experience and narrative." David Griffiths, Aymeric Mansoux and Marloes de Valk, "Naked on Pluto" in A Blueprint for a Lab of the Future. Baltan Laboratories, 2011.

As part of *We Are Forests,* a final presentation took place within each residency block in each location (Bristol, Amsterdam, Budapest). The presentations were open to potential audience, other artists and those with expertise relevant to artists' practice. In Brazil, the artists were able to test different stages of "Narrative Navigation" in previously defined places where the actions could take place, considering different zones in the city with lack of digital art accessibility. Amongst the selected areas, three of them hosted Labmovel activities during the residency: public square in Freguesia do Ó, Public Library Mario de Andrade and Centro Cultural São Paulo.

As part of the third case study we conducted a thorough analysis of the impact of documentation methods that were used during the development process of the residences.[1] For all the residences we used a blog to document the development.[2]

'Mock-up shots from You Are the Protocol', Sander Veenhof

One of the pitfalls of a standard blog is that the structure influences the outcome of the documentation, for example it is chronological, always showing the last post that is created. Another difficulty was setting the goal(s) of the blog: the audience you're writing for influences what you will be writing. Although all the artists were open to sharing their experiences during the process, it quickly became apparent that there are very different ways to document a process. Some artists preferred to use video statements, others captured the development in photography, some used informal and personal narrative techniques, again someone else would focus on technical steps that were made. Furthermore, the information on a blog is very contextual but the content can be accessed, copied and shared by anyone as soon as a post is published. It happened a few times that information or interviews were posted on other websites without reference or information that would explain the views expressed.

Next to an evaluation of the content and use of the blogs, with the third residence we compared the documentation strategy with documentation methods that are being developed for the restoration and preservation of contemporary art.3 Rather than only serving the purpose of reconstruction, these models prove to be flexible and therefore open to different usages, creating an interesting point of departure to experiment and analyse the documentation of artistic working processes. The main focus of these models is doing interviews with the artists during the whole process at set times and around specific issues. The documentation models proved to be valuable guides for posing questions and addressing specific issues. The interviews clearly showed the changes in the artists' thinking and their decision-making processes. A more in-depth analysis could provide other artists, developers, researchers and organisers with interesting insights and useful information regarding creative and artistic working processes

On going questions:

Should the role of the labs be defined within the residency? In both cases, the role of 'facilitating making and thinking' was present at each location.

However each lab had a unique emphasis, drawn from the expertise within their communities. It's therefore important to define not necessarily the role of the labs, but the specialist qualities of each lab and what their communities offer. This enables artists to efficiently plan and maximise project development at each location.

How can we best keep each other updated about process and facilitate communication between labs? We have continuing discussions on this point. Online tools were utilised frequently throughout the residency, but as previously mentioned, the importance of face-to-face meetings should not be underestimated.

Fig: You Are the Protocol', Sander Veenhof, photos by Lucas Gervilla

Is there a necessity to match-make and support networking of artists? This is important and as individual labs we often provide this 'service' within our constituencies. However, there is a great opportunity to escalate this by facilitating cross-lab networking.
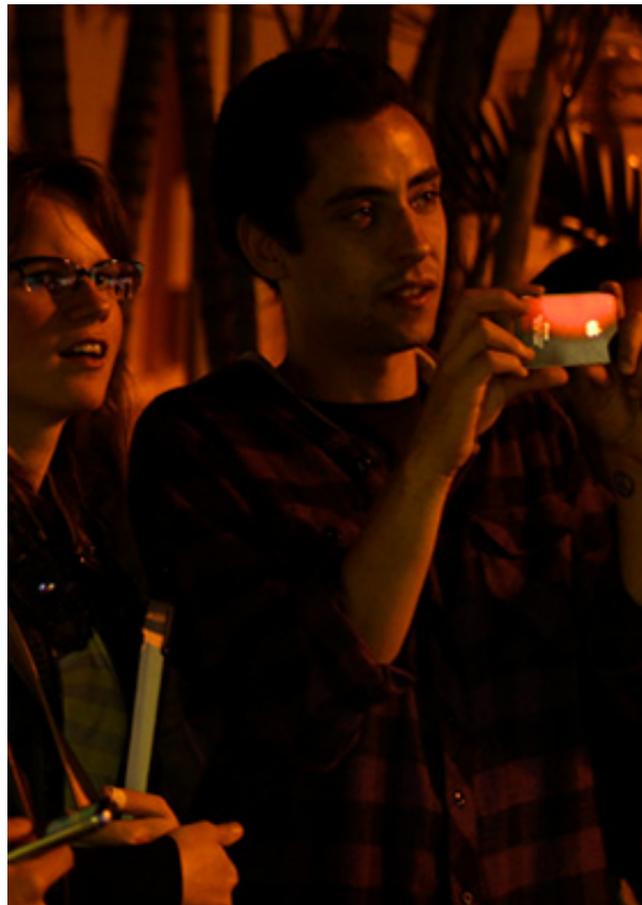
Conclusion: the residency life cycle

The life cycle of a collaborative residency begins before commencing the development period and continues for a short while afterwards. From the experience of producing the different projects, we recommend considering the following 4:

Before:

· Build the collaboration: identify partners with complimentary values yet unique offers, who advocate open, collaborative approaches

· Consider western and non-western ways of working and producing residencies

· Research phase: Select an artist who also advocates an open, collaborative approach. Engage in subsequent discussions regarding the project and possible needs and begin sourcing collaborators etc.

· Manage expectations: it's important to get this right from the outset and get it right with everyone involved, including artists, labs, partners, collaborators etc.

· Define the scope, resources, goals and identify the adjustable variables

· Identify the opportunities to work with and learn from partner organisations and where possible, build these opportunities into the programme from the outset

· Is the residency an exchange or not? - Ensure everyone has a shared understanding and attitude

During:

· Encourage curiosity through regular critiques and (in terms of technology augmented projects) testing of the work

· Maximise the relation to local context

Naked on Pluto, screenshots

· Residencies contribute to making the lab into what it is - consider how to keep traces of that and share it

· Be aware of the everyday life dimension of the residency - the human, informal dimension - it's essential

· Flexibility can be an issue, find a cohesive way to accommodate it

· Get deep into other partners ways of working

· Document and share the process throughout

Afterwards:

· When does the residency end? Bring it to a celebratory close

· Disseminate the 'story' (public and other) and present work-in-progress

· Share key learninConsider how to continue fostering relationships between host and artists; and between project partners. Also consider how to continue the exchange of knowledge.

· Consider how to measure the outcome qualitatively and quantitativelyConsider how to support the work beyond the residency period: is there scope for touring? Or informal advice you can offer on opportunities such as project grants, or other residencies the artists could access, to further develop the work?

The potential impact of the transnational collaborative residency is great. It makes space for ideas and reflections that would not otherwise be possible. It creates focus, accelerates project development and exposes process. As producing organisations, we've found that we can work together to connect place and space, link our networks, and share resources and knowledge.

Through this cooperation, we have multiplied support for artists, offered diverse cultural contributions, archived process and increased our engagement with audiences worldwide. And in the present, unpredictable, global financial climate,

we believe this model does offer increased stability for artists and participating organisations, and unlocks potential that we simply hadn't imagined when we began.

Case Study #1: Naked on Pluto Collaborative AiR between NIMk, Baltan Laboratories & Piksel

The set-up:

Baltan Laboratories in Eindhoven (NL), Netherlands Media Art Institute (NIMk) in Amsterdam (NL) and Piksel in Bergen (NO) launched an open call for proposals as part of the exhibition project Funware. We were looking for interesting new software art projects that could be developed in the period of June – November 2010 through a shared residency. The new work would be presented in the Funware exhibition at MU in Eindhoven (November 2010 – January 2011).

The Funware exhibition (curated by Olga Goriunova) demonstrated the trajectory of humour and affect as constitutional to software and computing. The

exhibition aims were to make such an 'obscure' technological object as software, open, palpable and approachable, bridging a gap between 'serious' production such as technology and 'non-serious' production such as different forms of art. The exhibition had a few distinct threads: games; ASCII; code art; a few vectors of AI; computers in popular culture; spyware, conceptual software, hardware modification, hacker/virus approaches, sound, software modification, pranks, participatory web. And as software is intertwined with the hardware it runs upon and the networks that construct the society in which it rules, the exhibition featured a lot of projects dealing explicitly with computer hardware or the materiality of hardware as well as engaging projects experimenting with sound.

The project:

Naked on Pluto is a Multiplayer Text Adventure on Facebook developed by Dave Griffiths (UK), Aymeric Mansoux (F) and Marloes de Valk (NL). *Naked on Pluto* proposes a playful yet disturbing online game world, developed with Free/ Libre Open Source Software, which parodies the insidiously

invasive traits of much "social software". The city of "Elastic Versailles" is animated by the quirky combinatorial logics of a community of fifty-seven AI bots that glean Facebook data from subscribers to the game. Naked on Pluto's bot crew, which are hard to distinguish from other agents in this text-based environment, are dysfunctional gatekeepers whose access-control means are broken by the participants only to be elastically "healed" by the bots. Players attempt to override the game's restrictions, teaming up in order to ultimately crash and escape from the system. Reporting on activities via a blog and Twitter, and issuing a constant stream of incitation to click, declare, poke and buy, the bots run havoc with one's own and one's friends' data, generating more or less spurious links with chillingly escalating speed. Disconcertingly familiar faces and information from one's personal and associated profiles are indiscriminately blended in a brash prosumer landscape which, like the original Versailles, is designed for promotional parades of inseparable personal and ideological attributes. No player information is shared, stored, or relayed back to Facebook in this malleable social ecosystem where all that counts are glimpses of fleeting visibility. Naked on Pluto caricatures the proliferation of virtual agents that harvest our personal data to insidiously reshape our online environments and profiles, highlighting the ambivalent hallmarks of major social networks: friends as quantifiable and commodifiable online assets, personas carefully fashioned contrived to impart a sense of "intimacy", and disingenuous publishing of "private" data as self-advertising. The emergence of intelligence in this game is ultimately, hopefully, that of the players who manage to escape from it.

http://pluto.kuri.mu
http://naked-on-pluto.net/

Case Study #2: We Are Forests
Collaborative AiR between NIMk, 5 Days Off, Kitchen Budapest (KIBU) & Pervasive Media Studio

The set-up:

NIMk, 5 Days Off, KIBU & Pervasive Media Studio advertised a global, open call for artists seeking time and space to research projects at the intersection of art, mobility and culture. The programme was set up to support early stage ideas that utilised pervasive technologies, free/open source software and involved audience participation. It was designed to be a valuable opportunity for artists to explore process and develop experimental works within four unique collaborative environments. Artists were not pressurised to produce a finalised piece, but were asked to present work in progress within a public arena and/or festival environment.

The project:

Duncan Speakman and Émilie Grenier were commissioned to research and develop a new participatory sound work entitled We Are Forests: In a social environment full of micro-blogging and continuous status updates communicated through text and image, what happens to the emotional weight of the human voice? We Are Forests was a participatory sound work that used everyday and emergent mobile technologies to ask, 'What would you whisper into a stranger's ear'?

To find out more about the project you can read the artists journal: http://nimk.nl/blog/weareforests/

Case Study #3: Narrative Navigation & You Are The Protocol. Collaborative AiR between NIMk and Vivo arte.mov

The set-up:

Netherlands Media Art Institute (NIMk) in Amsterdam (NL) and Vivo ARTE.MOV in São Paulo (BR) launched an open call for proposals as part of the cultural funding programme Central de Cultura, created to intensify cultural exchange between The Netherlands and Brazil. The aim of this program is to lead to long-term cooperation between artists between the two countries. The fund that has committed to our project is the Mondriaan Fund. We were looking for proposals from artists or curators to develop an art project or workshop programme for a mobile lab & presentation platform that could be used and adapted by both organisations.

The projects:

Narrative Navigation is an open structure for geo-located narratives about the city. Anyone can use it to add its personal narrative to a city, or simply to navigate through the stories that are already in the system. It can be a memory related story or an idea for the future, a real fact or a simple quotation. The project expands the idea of mobility beyond devices and instruments, and encourages the user to actually walk through the navigation, creating new routes of narratives.

You Are The Protocol is a communication network based on dynamically generated QR-codes, which contain multiple messages each. It works like the IP-protocol (which powers the internet) but in this case you are responsible for the traffic of messages, which are carried around in the offline cache of your smartphone. You Are The Protocol is useful in cases of incidental network loss, deliberate political deactivation of networks or in situations/countries with minimal online connectivity. Whether you are an activist, a hidden storyteller or just a communication addict - this offline dynamic messaging system allows you to keep on communicating. http://youaretheprotocol.net/

Narrative Navigation and You Are The Protocol were developed by VJ Pixel and Sander Veenhof.

Biographies of the labs

Netherlands Media Art Institute (NIMk) stimulates the free development and propagation of contemporary art, in particular on the basis of technology. Art works are developed under commission and in collaboration. The works are shown via the Internet, at national and international festivals, events, exhibitions at diverse art institutions and for educational purposes. The NIMk follows a non-individual promotional policy for media art in which completed works are presented to professionals, institutes and contacts.

Errata: As of January 2013 NIMk will not receive any more funding from the national government and the organisation decided to discontinue its current activities. Although several other initiatives

are undertaken to safeguard the collection, archive, distribution and presentation, there is yet no concrete plan for the continuation of the artist in residence programme. The coordinators responsible for this programme, Annet Dekker and Annette Wolfsberger, are seeking other ways to organise collaborative residencies. http://aaaan.net.

Collaborating producers of Naked on Pluto:

Baltan Laboratories (Eindhoven, NL) initiates, mediates and shares innovative research and development at the intersection of art, design and technological culture. Baltan sees the laboratory as a way of working. It is both a network and a methodology for creating and sharing new concepts, tools and knowledge. Baltan is a flexible, collaborative platform for future thinking that places art and design research at the core of its activities.

Angela Plohman was director of Baltan Laboratories until June 2012. She is now grant manager at the Mozilla Foundation in Toronto, Canada. Olga Mink is the new director of Baltan Laboratories and is continuing the artist-in-residence programme. http://www.baltanlaboratories.org

Piksel is an annual event for artists and developers working with free and open source software, hardware and art. Part workshop, part festival, it is organised in Bergen, Norway, and involves participants from more than a dozen countries exchanging ideas, coding, presenting art and software projects, doing workshops, performances and discussions on the aesthetics and politics of free and open source software.

Gisle Frøysland is director of Piksel and for this project we also collaborated with Elisabeth Nesheim. http://www.piksel.no/

Collaborating producers of We Are Forests:

Kitchen Budapest (KIBU) is a place of witchcraft and inspiration. It is an innovation lab where the fields of art, research work, start up development and education complete and support each other.

This creative milieu was founded by Magyar Telekom in 2007, and it has two fundaments: open-mindedness and team-work. The team spirit is further enhanced by our colleagues' and resident artists' constant curiosity and desire to discover something new. Based on the interdisciplinary thinking of these young engineers, artists, designers and sociologists our objective is to find the connection points of society, arts, science, urban space, mobile communication, the internet, digital culture and startups.We aim to give answers within an international context, and also to ask questions from KIBU's unique point of view.

Fig: Naked on Pluto, screenshots

Melinda Sipos worked at KIBU until February 2012, currently she is freelance designer, cultural producer. http://www.kitchenbudapest.hu

Pervasive Media Studio is Watershed's city-centre research lab, bringing together artists, technologists and academics to explore the future of mobile and wireless media. Research projects are both cultural and commercial and span gaming, projections, location-based media, digital displays and new forms of performance. Run in partnership with Bristol University and the University of the West of England's Digital Cultures Research Centre, the studio has a great workspace, an open ethos and a can-do attitude.

Clare Reddington is Director of iShed and Pervasive Media Studio, and Victoria Tillotson is iShed Producer at Pervasive Media Studio in Bristol. http://www.watershed.co.uk/ished // http://www.pmstudio.co.uk

5 Days Off festival annually showcases the latest developments surrounding electronic music. Within the arts programme of the festival called 5 Days On, and more specifically its exhibition, Cloud Sounds, the festival explores the culture of electronic music and culture, with a focus on remix culture and Web2.0 participatory procedures such as crowdsourcing and (re-) appropriation of social media for the arts processes and purposes.

Jan Hiddink is coordinator of the 5 Days Off festival in Amsterdam and works as programmer at Melkweg in Amsterdam. http://www.melkweg.nl

Collaborating producers of Narrative Navigation and You Are The Protocol:

Labmóvel is a Lab of mobile media for the production of art residencies, workshops and cultural events. Because of its nomad character, the programme aims to create temporary venues that instigate curiosity and increase access outside the institutional structures, encouraging a cultural, social and economic crossing encounters.

The mediation acts as a key-role in the interaction between this structure and its public. This program is coordinated by Lucas Bambozzi and Gisela Domschke and is supported by Programa Arte e Tecnologia from Fundação Telefônica (in cooperation with Vivo arte.mov).

Gisela Domschke is freelance and independent curator/producer http://www.giselad.com, she was the Brazilian coordinator for this project. Lucas Bambozzi is director of Vivo arte.mov.

Notes:

1 Thanks to Julia Bac who coordinated the documentation of the third residence and started the research.

2 For Naked on Pluto a special technical blog was created which described the technical development, key decision points and the programming code that was used.

3 In particular we focused on a documentation model that was designed for the performance Extra Dry by the internationally renowned Amsterdam based dance company Emio Greco|PC. This documentation model was developed in the context of the two-year Inside Movement Knowledge (2008-2010) research project lead by the Art Practice and Development Research Group in cooperation with the dance company. For more information: http://insidemovementknowledge.net (accessed June 2012). About the use of documentation models see Van Saaze and Dekker (forthcoming 2012).

4 These reflections were also elaborated and discussed during the working group "Lab as Residency" at the LabtoLab network meeting in Nantes in June 2011. http://www.labtolab.org

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Annet Dekker

Annet Dekker is an independent curator and researcher, based in Amsterdam. Currently writing a Ph.D. research on strategies for documenting net art at Goldsmiths University. http://aaaan.net

Gisela Domschke

Gisela Domschke is a Brazilian media artist and curator. She is a guest lecturer at FAAP, PUC and Escola São Paulo and works as an independent curator in collaboration with British Council, AHRC, Virtuel Platform, Netherlands Media Art Institute, Vivo Arte.mov, FutureEverything

Angela Plohman

Angela Plohman has worked for many years in the field of art and technology. From 2008-2012 she was the director of Baltan Laboratories in Eindhoven. She recently relocated to Toronto and is the Grant Manager at the Mozilla Foundation

Clare Reddington

Clare Reddington is director of The Pervasive Media Studio, part of Watershed in Bristol, UK. Her role is to develop talent, share knowledge and produce collaborative research in the creative technology space.

Melinda Sipos

Melinda Sipos is a Budapest-based free lance designer and cultural producer who works locally and internationally. She initiates, co-ordinates and participates in various projects and workshops at the intersection of art, design and technology. http://www.melindasipos.net

Victoria Tillotson

Victoria Tillotson is a Producer at Watershed where she designs and delivers artistsÐ residency programmes, international programmes and creative technology projects

Annette Wolfsberger

Annette Wolfsberger, is an Austrian-born producer and curator based in Amsterdam. She is producer and part of the curatorial team of Sonic Acts (NL) & Kontraste (AT), and manages a European exchange programme for Trans Europe Halles (TEH). www.aaaan.net; www.sonicacts.com www.kontraste.at; www.teh.net

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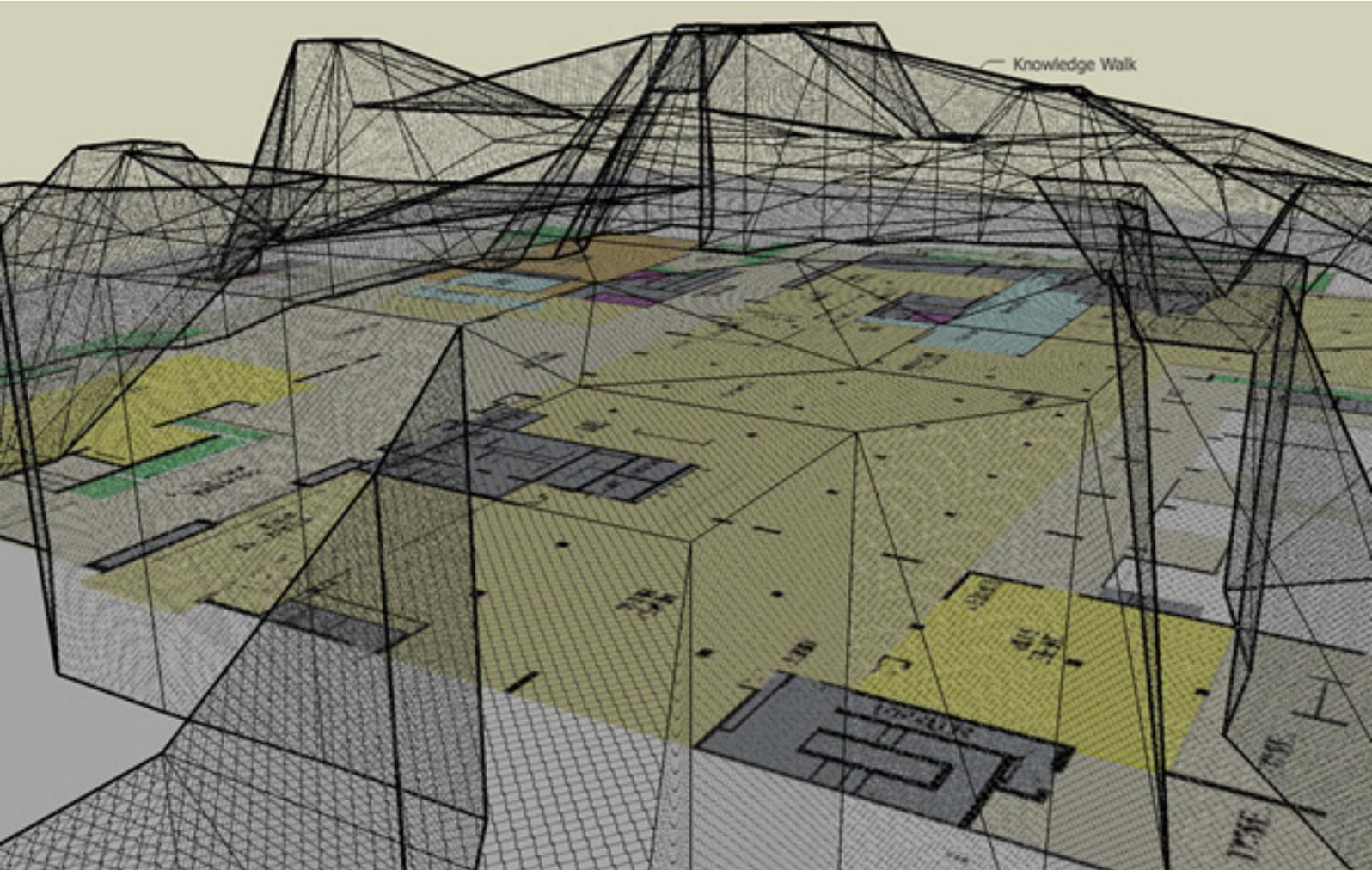
Mapping the strength of the Wi-Fi signal across the State Library of Queensland in 3D; Courtesy of Dan Hill

IMMATERIAL PUBLIC SPACE
The emperor's new architecture

by Selena Savicic

Globalization theorists argued throughout the 1990s that in compressed space distances play no role any more (Soja, 2003). Thus, *virtual* was recognized as some kind of *real*. Just as Manuel Castells rightly argued that reality has always been perceived through symbols (Castells, 1996), *virtual reality* functions as a mediated experience. Virtual realities that became prominent in the 1990s had a real impact on space and time. Today, we are facing another kind of impact. Space of wave propagation is physical. What happens instead of compression of time and space is a distribution of communication devices that augment locations. Mobile phones and "online-ness" make social space more distributed. Without having to go somewhere to meet someone, more spaces become a potential meeting place. At

the same time, there is even more expectation for connectivity at all times. The authors of Net Locality (Gordon and de Souza e Silva, 2011) argue that the current reconfiguration of space recomposes social interactions. A paradigm-shift away from virtual reality that "attempts to make a world inside the computer" (Weiser, 1991) was confirmed by the ACM (Association for Computing Machinery) with the launch of their publication Ubiquity in 2000, and a plenary conference *After Cyberspace* (McCullough, 2004). This is a significant change of concepts about the role of technology in creation and mediation of space. Once envisioned as a tool to *depict* the non-existent environment and immerse a person in it, computing is now tuned onto processing the environment. The key aspect of this change

technology is situated in a physical environment, operated by people on the move. Location becomes important. The physical experience is augmented, rather than cut off by technology. Because of the increasing saturation of the environment with computing, we are easily blinded by over-information. In his work on pervasive technologies, Weiser recognized this problem early.

He suggested a new way of focusing on computing, which gave way to the concept of *ubiquity*. With the construction of a *U-city* in South Korea and similar contemporary developments, the word *ubiquitous* came into the popular discourse. Coined by Weiser in 1991, the term ubiquitous came to stand for computational capacities of technology that is built into our environment and goes by mostly unnoticed.

Weiser described this phenomenon as "computers that are disappearing..." (Weiser, 1991) referring at the same time to the power of 'blending in' that happens because we have learned it sufficiently well; and the anxiety reflected in the dystopian Philip K. Dick novel "Ubik". According to Weiser, ubiquity is diametrically opposed to virtual reality, because it "invisibly enhances the world that already exists" rather than trying to "make a world inside the computer" (Weiser, 1991). It is clear that we cannot pay attention to all processes at once, but we are good (and getting better) at switching focus. This focus switching has become the key aspect in the design of interaction with the environment. With different degrees of interactivity, "the disciplines of architecture and interaction design both address how contexts shape action [...] these processes are ambient." (McCullough, 2004).

New interfaces are emerging to embed information processing into the physical realm. They are mobile, networked and intuitive. Thus, "architecture has acquired a digital layer." (McCullough, 2004). Computing happens in the periphery, but includes physical architecture, which literally gives space to different levels of accessibility and makes interaction more intuitive.

The current omnipresence of accessible Wi-Fi signals in the city is actualizing the potential for ubiquitous computing, connecting diverse mobile devices through the same network protocol.

My main interest lies with the area of wireless spatiality, the hybrid space that is created on the intersection of technology and physical space where it is contained. What are the mutual impacts of pervasive communication technology in mediating physical space; and of the built space (architecture) on communication - as an obstacle for propagation of wireless signals, but also its infrastructure with the intention to bring more awareness of their presence, I will look into the physicality of wireless signals, and their possible architectural qualities.

Aesthetic Approach

We are organizing the space with technology. This space is public, or at least shared, as technology is used here to enable communication and exchange. Like every other public sphere, this space has its architectural and political characteristics. On the architectural side, we recognize utilitarian concerns like accessibility, stability and security of the network infrastructure. On the political side, we have issues of ownership and control, as well as participation and accessibility by different parties. The discourse on the latter is often *coloured* by a dose of paranoia about the social consequences of ubiquitous technology.

Although it is necessary to keep a critical attitude towards this saturation with sensors and microchips (Thackara, 2002) the current debate often overlooks everything outside the instrumental use of waves. This kind of criticism is unlikely to produce any relevant design challenge or spur innovative thinking. I would like to propose a different approach, one that engages with the presence of wireless signals in an innovative rather than conservative way.

My intention is to focus on the aesthetic potential of specific areas of electromagnetic radiation, cutting away from the instrumentalist debate. Treating wireless signals as aesthetic phenomena, I hope to engage in a critical debate on another level.
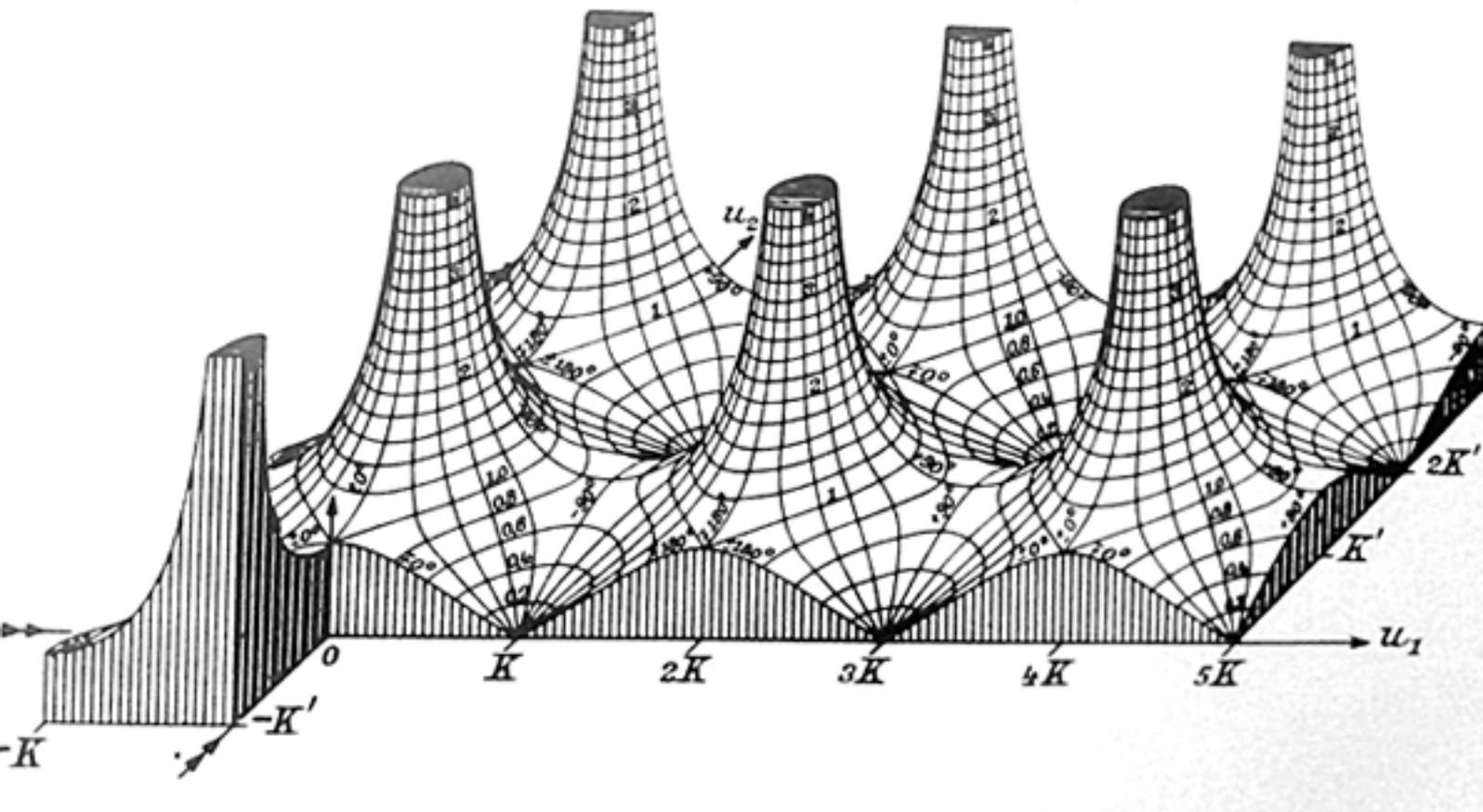
Looking for the origins of parametricism: Relief of the doubly periodic function "cn u for k=0.8" [Eugen Jahnke and Fritz Emde, Tablse of Functions with Formulae and Curves] obtained by Le Corbusier from the director of ETH Zurich in October 1956, in his search for a 'catalogue of forms' for his design of the Philips pavilion at the Brussels World Expo in 1958

Spatial theory:
from Network Society to Net Locality

"The Internet of Things is happening, and it's being built right here on Cosm." they proudly announce on the website of the Cosm platform (Cosm-previously known as Pachube - 2012). Previously, Adam Greenfield discussed ubiquity in his book Every ware (Greenfield, 2006), marking a significant point in recognition of the phenomenon and its impact on space. In his short book "The Internet of Things" Rob van Kranenburg (2008) discussed some consequences of ubiquitous computing on our environment with a critical perspective towards the actual improvements it brings.In "The Rise of the Network Society", Castells introduced the concept of 'space of flows' which is not a placeless space, because "it does have a territorial configuration related to the nodes of the communication networks." (Castells 1996). It clings on the idea of time-space compression discussed in the context of globalization by theorists such as Paul Virilio (Virilio, 1997; Virilio, 2000). However, it deflects from its negation of relevance of physical space, thus recognizing the ultimate importance of location and spatiality within the network. In a later research report titled "The Mobile Communication Society", Castells et al. suggest that there is an on going shift from already-decentralized, stand-alone computers towards entirely pervasive computing (Castells et al. 2004).Edward Soja describes the term 'spatiality' in a footnote in Postmodern Geographies (Soja, 1989) as a "formative structure created by society" with an "inherently social quality". Soja argues for importance of spatiality, pertaining to Lefebvre's views of space as his primary interpretive viewpoint. Soja recognized an increased spatial consciousness – the 'spatial turn' in the form of significant reinsertion of space in the humanities and social sciences or the 'turn' of academia's attention to space.

What is common to spatial thought from Lefebvre, Soja and Castells to recent books like Net Localities and Code/Space, is the idea that space is a result of some form of social interaction. Soja's view of space as "a social product - that (it) arises from purposeful social practice" (Soja, 1989) is confirmed in Castells's writing:

"Space is the expression of society" (Castells, 1996)". In Digital Ground, McCullough recognizes the new character of information technology, which "has become ambient social infrastructure", (McCullough, 2004) while Kitchin and Dodge discuss how "social is inherently temporal and spatial" in Code/Space (2011). Eric Gordon and Adriana de Souza e Silva refer back to Lefebvre's view of space as inherently social (Lefebvre, 1991), to conclude that "reconfiguring spaces means reframing the social interactions within them." (Gordon and de Souza e Silva, 2011)

Fig: Immaterials: light painting WiFi by Timo Arnall, Jørn Knutsen and Einar Sneve Martinussen, 2011; Courtesy Timo Arnall

It might be true that "wireless communication homogenizes space" (Castells et al. 2004) because of the way it connects people independently from their location. Or it might be just difficult to break with this seductive idea embraced by the theorists in the 1990s, who argued that space becomes equal to place, places being condensed with connectivity.

However, already in 1996 Castells recognized that in a process which "connects advanced services and provider centres... territories surrounding these nodes play an increasingly subordinate function, sometimes becoming irrelevant or even dysfunctional" (Castells, 1996). More recently, Castells wrote more on the structure and meaning of the space of flows, which he finds to be "not related to any place but to the relationships constructed in and around the network processing the specific flows of communication." (Castells et al. 2004) This

problem is discussed in detail for example in the book Splintering Urbanism through a broad range of examples of uneven development of infrastructures making "physically close spaces ... relationally severed" (Graham and Marvin, 2001).

Because the physical network infrastructure is not evenly distributed, network also does not distribute evenly throughout the world. Fiber-optic cables are laid along the London's financial district and Wall Street to avoid any possible delay in the execution of trading algorithms; at the same time, in many African and some South American countries, dial-up modem speeds are still a standard (Index 2012)

So far we have examined the 1990's theory of the network shift, the increased connectedness of individuals and organizations throughout the world. We are talking here mainly about cable-facilitated networks. What, if anything, changes with the introduction of wireless?

According to Adrian Mackenzie, "Wi-Fi connections, intermittent, unstable, and uneven as they often are, act as a kind of patch or infill at the edges and gaps in telecommunications and network infrastructures" (Mackenzie 2010).

Their distribution is sporadic and the topography of the wireless network infrastructure is rather scattered. Because Wi-Fi access points are most commonly installed and managed individually by their users, the spatiality of Wi-Fi infrastructure follows no particular spatial logic. Its coverage is unpredicted and changeable.

With the rise of urban computing technology, Ava Fatah gen. Schieck recognizes the emergence of interaction spaces between urban environment and pervasive computing systems which "are not limited to architectural spaces but also include spaces that are created by the mobile artefacts." (Fatah, Penn, and Neill 2008) The authors of Net Locality are looking at changes in the use of space that came together with the increasing use of location-aware networked devices. The authors claim "Net locality has transformed immersion from a function of large screens and virtual reality to a function of small screens and the representation of located information networks." (Gordon and de Souza e Silva 2011). Thus, social networks turned out to be more immersive than virtual environments.

How public is the 'hertzian' space?

Wireless communication both occupies and distributes within public space. Some of it's spatial features are therefore necessarily political. With Jacque Ranciere's definition of the "distribution of the sensible" – as a system of common facts that delimit the respective parts, visible and invisible within a particular aesthetic-political regime, we find a clue for analysing this political aspect. What is the relevant political regime for distributed wireless communication? Most of information we daily access is served wirelessly using radio waves – from FM radio, through satellite signals and mobile phones, to wireless Internet. First wireless information served was radio broadcast, coupled with home radio receivers. Since the Maxwell's radio-wave theorem in 1864 and the creation of the first radio transmitter some 20 years later by Marconi, radio technology was developed to allow transmission of information (in the form of modulated audio signal) between two relatively distanced points. The topology of this network was static and therefore the change of the use of space was not great, though radio signal did cross-big distances and connect the receivers with remote broadcasts. While radio broadcasting is a one-way centralized transmission, with only licensed stations allowed to broadcast at a specific frequency, some contemporary wireless communication systems allow for a more horizontal exchange. Particularly

in the unlicensed spectrum, it is possible to transmit from any location, and also share the spectrum across different protocols. (Peha, 1998) The unlicensed spectrum allows any device (granted equipment compatibility) to transmit and receive information. Most commonly used license free frequencies are at 900 MHz and 2.4 GHz. Some regulations do apply, like for example in the power allotment (EIRP), which is ten times higher in the US (30dbm or 1000mW) (Federal Communications Commission, Washington, D.C 1999) than in the EU (20dbm or 100mW) (European Commission 2010) for devices broadcasting at 2.4GHz. Commercial high-speed Internet services also use parts of the unlicensed spectrum. Wi-Fi technology (Wireless Fidelity, a technology standard for wireless data exchange) uses radio waves on the frequencies of 2.4GHz or 5GHz to transmit information between devices. Wi-Fi enabled devices most commonly operate in the range between 2.4GHz and 2.5GHz, split in 14 channels to decrease interference with other electric devices which share the same frequency range - the microwave, Bluetooth gadgets, Baby phone and wireless surveillance cameras. Wi-Fi technology has the capacity to communicate multiple types of media over the same protocol: text, voice, images and video. Just as radio-amateurs from the beginning of the 20th century experimented with radio equipment to extend its range and performance, Wi-Fi users are tinkering with their routers and antennas to extend and improve functionality of their networks (Bar and Galperin, 2004). Because these radio waves propagate through the air freely, this traffic is physically available to everyone with a Wi-Fi enabled device. Yet, wireless networks mostly appear as secured, using WEP or WPA encryption integrated in the traffic itself, for the reasons of privacy and security. This makes it impossible for anyone not knowing the code to take part in communication, although they are physically participating.

The *share ability* of the Wi-Fi infrastructure was interestingly reflected in the cases of several cities like Taipei (Taiwan) and London (UK) who decided to launch citywide wireless Internet access projects. These would provide constant access to the Internet and location-based services

to all users (for the price of agreeing to the central network provider's terms and conditions). This strategy was not picked up by many cities, as the city-provided wireless Internet access failed to take on a significant role in user connectivity (Mackenzie 2010). Because of network security and otherwise convenience, users preferred to secure their own network access, occupying public space with wireless signals protected with passwords. So what is the future of wireless Internet? On one hand we had the utopian dream of a "cyber-revolution". In the spirit of Barlow's Declaration of The Independence of the Cyberspace (1996) many thinkers still believe that mere accessibility will evoke different modes of social organization. For example, Bar and Galperin (2004) discuss the possibility for dynamic, peer-to-peer Wi-Fi networks to replace wired network infrastructures, as they are scalable and more easily distributed. Aware of the limitations put on by the existing legal environment (equipment power restrictions, frequency range for operation and restrictive agreements by current broadband providers) they advocate the extension of this decentralized infrastructure to another level. Because the infrastructure is built bottom-up and because technically, Wi-Fi clients can act as Wi-Fi access points, thus "all Wi-Fi devices can be programmed to detect other devices within their range and create ad-hoc connections" (Bar and Galperin, 2004), mesh networks could spontaneously emerge when enough Wi-Fi devices are present in an area. On the other hand, the competition between communication technologies does not lead to multiplicity and equal distribution, because "electronic intermediary services providers are populating the new markets and deploying strategies that are no less informed by monopolization strategies than in the past. " (Mansell, 1999, 3). New technologies evolve within an existing institutional context that moulds them to established social and market practices (Bar and Galperin, 2004). Thus the centralized approach to wireless networking reflected in the UMTS service might well win over the distributed AP mesh structure. Because every single byte can be charged to each user, this model is much more interesting to commercial companies than building an overall Wi-Fi meshed network, which they would be well capable of too. On the other hand,

UMTS providers would need to collaborate on a much more global level to make up for the comfort Wi-Fi technology provides to users outside of their countries of residence. Because Wi-Fi access points depend only on hardware compatibility, it would be necessary that UMTS connections provide the same service to the user independent from their current location (whether on a trip, holiday or at home). It is therefore most likely that both will continue to coexist for some time. to all users (for the price of agreeing to the central network provider's terms and conditions). This strategy was not picked up by many cities, as the city-provided wireless Internet access failed to take on a significant role in user connectivity (Mackenzie 2010). Because of network security and otherwise convenience, users preferred to secure their own network access, occupying public space with wireless signals protected with passwords.

Urban Computing and Locative Media

Instead of a dark room with a screen, mouse and keyboard, we are more likely to be online in a café, scrolling down the touch screen of a smart phone. It is typical of a 'neo-nomad' to live the 'Starbucks lifestyle', relying on mobile technology while relocating around the world (Abbas, 2011). Problems of 'neo-nomadism' are many, as described in detail by Yasmine Abbas, but they are a group of users who were 'liberated' by mobile technology. Exactly this is the point of Net Locality: contrary to the general prejudice about technology's alienation effect on the physical experience of the world (which is justified by the way we used to connect to the web in the 90s), new technologies are making us aware of locations, and making locations aware of us (Gordon and de Souza e Silva, 2011).

Because "games provide a logic for user interaction" (Gordon and de Souza e Silva 2011), they have been widely used to simulate behaviours and situations. *The Familiar Stranger* (Paulos, e. &Goodman, 2002) and *Umbrella.net* (Moriwaki, K. & Brucker-Cohen, 2002) made use of Bluetooth connections between mobile phones, to discover the position of other players. Further on, *Can You See Me Now* (Blast Theory and Lab 2001) is an interesting example that combines

mapping with real-time communication between participants, local and remote. Botfighters (2001) and Mogi (2003) engaged the players to consider their everyday urban experience as part of the game, having to change their usual paths (take the bus instead of the metro) in order to stay online – and thus in the game.

Fig: RKNFG. Interactive installation developed during a summer residency at Atelierhaus Salzamt, Linz in September 2012, by Selena Savic

In the *Cityware* project, Ava Fatah gen. Schieck analysed interaction spaces generated by Bluetooth devices. The researchers observed the usage practices in order to come up with new forms of human-to-human interaction. The team considered different methods for mapping the physical and digital flow and the digital co- presence. The looked for design strategies for different experiences in the city or at least an understanding of existing city behaviours.

At the time of writing, Bluetooth technology provided more information on movement and interaction than the typically static Wi-Fi access points. "Within Cityware, we are extending Space Syntax consideration of the architectural spaces created by the built environment to include the wireless interaction spaces created by Bluetooth enabled devices. " (Fatah, Penn, and Neill, 2008). In the meantime, Bluetooth saw a fall in popularity, while Wi-Fi and 3G technology (3rd generation mobile pones, that provide mobile Internet access) became more pervasive. However, they concluded, "[communication] technology can be appropriated to support

emergent social interactions", and even become "a motivation to change the way they communicate and engage with others." (Fatah, Penn, and Neill, 2008).

In order to achieve a better understanding of the urban landscape augmented with the digital landscape of a city, we need to expand and adapt our understanding and practice of design. Looking at the urban environment as an integrated system made of both the built environment and pervasive computing systems, design can offer dynamic solutions that engage with both.

Shaping The Waves

Malcolm McCullough writes in Digital Ground: "Whenever goods, people, or electronic communications flow, space forms around them. (...) Places emerge at crossovers between infrastructures." (McCullough, 2004)

Physical properties of wireless signal propagation - the range, signal strength and possible obstacles determine their presence in the environment. *The space* formed by these waves is sometimes referred to as *hertzian*, because it consists of waves oscillating on frequencies expressed in Hz (SI unit of frequency named after Heinrich Rudolf Hertz).

This term is also used to describe "a holistic view of the electronic device and its cultural interactions" (Dunne, 2005). The problem with physicality of the *hertzian* space is that it is extremely difficult to (accurately) perceive and represent, leaving us with a vague idea about how it actually 'looks' like.
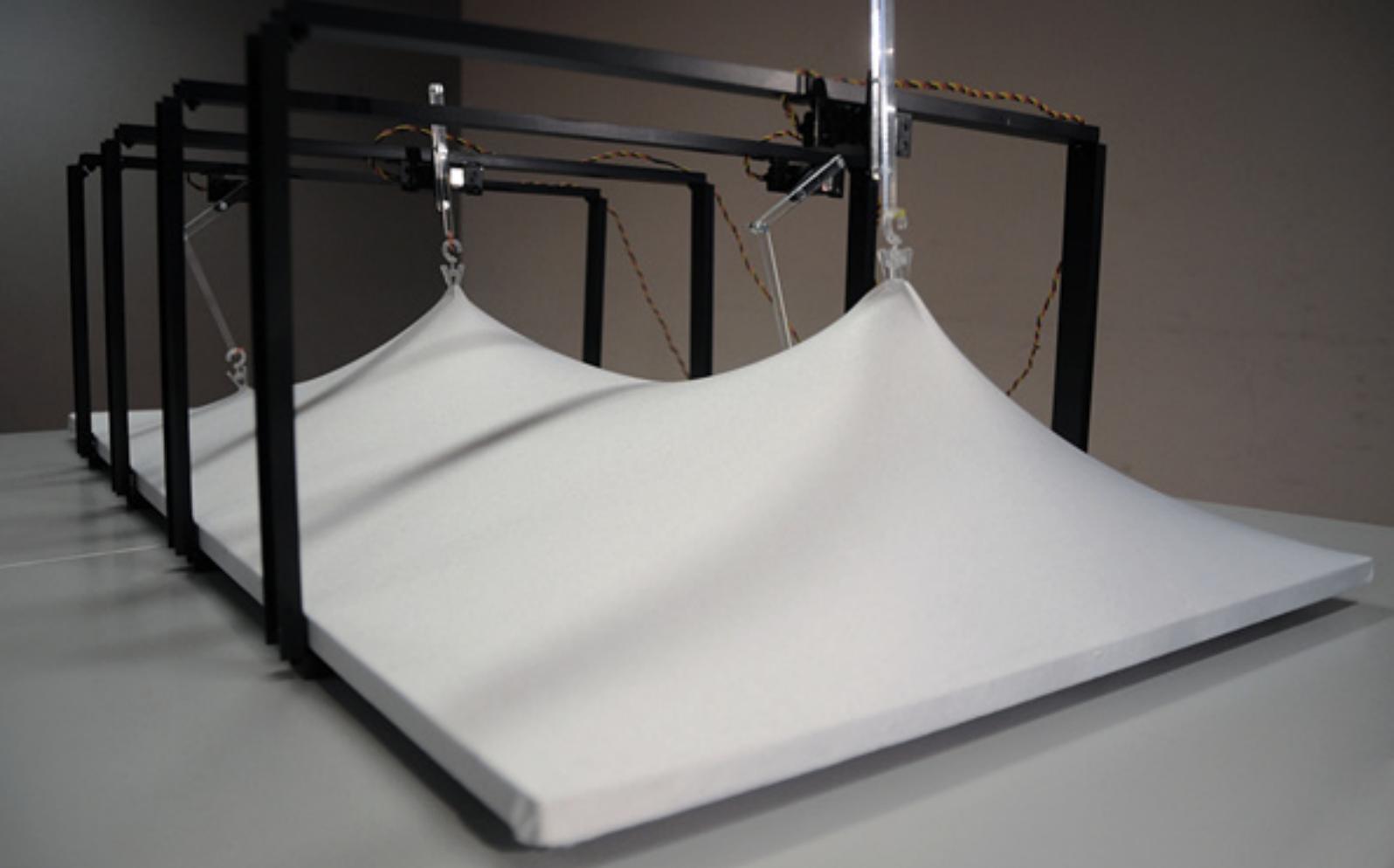
Quadricone, a model for an interactive environment, part of the Emperor's New Architecture research developed within the Sinlab, EPFL, Switzerland, by Selena Savic

"We prefer to think of the electromagnetic spectrum as an inhabitable landscape, with its own electro climate and electro geography." (Dunne and Raby 2001). This statement of the design duo Dunne&Raby marks an innovative attitude towards the aesthetic and critical possibilities for dealing with *hertzian* space. As part of their research in 'secret life of electronic objects', they produced a series of Placebo objects that responded to electromagnetic activity in the environment. Eight prototype objects were placed in volunteers' peoples' homes, instigating them to develop narratives to explain and relate to electronic technologies.

Marc Shepard published and edited several publications on the subject of hertzian space. He reminds: "Hertzian space is all around us, (...) how might we begin to think about how to shape these environments?" (Shepard, 2010).

The presence of wireless signals was tackled by numerous artistic projects that aspire to design with *waves in mind.* The team of the *Touch* research project applied 'light painting' photographic technique to visualize the Wi-Fi terrain within

several city blocks near the Oslo School of Architecture and Design. With a special interest in the Near Field Communication (NFC) and other intangible phenomena that have implications for design, they produced a 4m Wi-Fi measuring rod, containing 80 lights that respond to the Received Signal Strength (RSSI) of a particular Wi-Fi network. Walking with this rod, they could produce long-exposure photographs of network activity on the way.

In a project developed for the Graduate Design Research Studio, a horizontal tent-like structure was proposed to represent real-time activity on the public library network. Part of the Situated Technologies Research Group, University at Buffalo with Marc Shepard as Assistant Professor, this project is an interesting play with the metaphor of an invisible canopy and its visible counterpart materialized in the tent.

Swiss-based designer Carina Ow proposed a series of Wi-Fi-active installations, in form of dynamic OLED surfaces that display the current use of public city networks.

use of public city networks. A lot has been said and done in the area of interactive spaces - places where visitors would interact with (parts of) the environment, the environment typically responding by movement, change of light and colours or sounds. On the other hand, as shown above, quite some research has gone into visualizing the immaterial signals of Wi-Fi, RFID, etc. Still, Shepard rightfully argues, "little work has been done to place these technological developments within the larger context of urban architecture". This lack, however, is not answered in his text either.

Conclusions

Designing electromagnetic environments involves thinking about space in non-visual ways. It also understands overcoming the dominant instrumentalist debate about technology and the solely materialist practice tradition in architecture. Yet, there are indications that contemporary networked pervasive technology has already contributed to a spatial change, intensifying the way people engage with places and spaces. Marc Shepard finds that this might actually result in participative and adaptable designs, the goals that architecture and urban design have set for themselves for decades (Shepard, 2010). Thinking about technology is always linked to thinking about it's future, trying to forecast the next 'big thing'. How will *wirelessness* 'look' in 10 or 20 years? Bluetooth was still a promising technology in 2007; next year it was pushed back to the headset industry, while Wi-Fi standard took over wireless exchange of data. As Norman wrote in The Invisible Computer, "we tend to overestimate the immediate impact and underestimate the long-term impact" while at the same time placing the emphasis "on the technologies themselves, when it is really the social impact and cultural change that will be most dramatic." (Norman, 1999) Today, Wi-Fi is competing in popularity and convenience with the UMTS service. Just 6 years ago, The New York Times was speculating that Wi-Fi telephony (such as voice over IP) might displace the current business model used by cell phone providers (Richtel, 2006). In the meantime, cellular telephony has diffused rapidly through the world. With the release of 3G phones that provide mobile Internet access, mobile phones became a popular interface for location-aware computing and applications. Taking the usual browser access to a more personal level and allowing for a mobile experience of the Internet, smart phones threaten to render Wi-Fi protocols obsolete. This development is interestingly convenient for ISP providers, whose clients could easily share their networks with no compensation. To the contrary, cellular networks provided by cell towers and base stations allow users to roam seamlessly between cells, for a fixed price paid by each user. Considering previous indications, it might become even more difficult to 'tap in' the new centralized protocols of electromagnetic environments.

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Selena Savicic

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ARtotheque, Stedelijk Museum, Lowlands Festival, Amsterdam, 2010

LOOKING FORWARD
From Augmented Reality to Augmented Museums

by Miriam La Rosa

The act of thinking of (a future event) with pleasurable and eager anticipation because *something is going to happen*, is generally expressed in the English language with the idiomatic form *looking forward.*

Looking forward to the future is the projection to the future of hopes and desires, mixed together with predictions and speculations. Looking forward to the future is a natural tendency of people and a goal of society. In other words, looking forward is a goal of museums.

From December 2011 to May 2012 a public series of lectures organized by the Stedelijk Museum, University of Amsterdam, and de Appel Arts Centre, W139, Stedelijk Museum Bureau Amsterdam and Metropolis M took place in Amsterdam with the aim of debating the hottest topics at the moment floating around the cultural field. The title of the program was a manipulation of the above mentioned looking forward idiom. It was skillfully transformed in a more provocative and challenging version: *Facing Forward: Art and Theory from a Future Perspective*. The focus of the lectures was an invitation to look at the future instead of the past and to better deal with the contemporary meaning of art and culture. Furthermore, a specific debate was meant to discuss the current situation of museums and in particular, their future perspectives.

Taking into consideration the present occurrences in society and more specifically in the cultural sector, e.g., the general funds cuts in Europe, the easiest way to visualize the future of museums is through the shape of a big question mark. This is not a joke: this is for real. During the Facing Forward conference as well as in most of other debates related to the same topic, the point quickly seemed to move from discussing THE future OF museums to reclaiming a future FOR museums.

This is not going to be the point of this paper. What the future will be, nobody can define it as a whole, neither considering the difficulty of the current economic crisis, nor completely ignoring it. But a future will surely be. Thus the question "Is there a future for museums?" should be replaced with "What do we want from future museums?" Better still "What kind of experience future museums will be able to offer?"

In the above mentioned lecture of Facing Forward, the German art historian and theorist Hans Belting pointed out the question "What kind of museum do we want?" (Belting, 2012). This question was to be assumed as a new guideline for further debates. To follow this line, the answer will be a projection of hopes and desires, mixed together with predictions and speculations. In other words, the answer will be "looking forward". Additionally, in this "looking forward" mentality, the economic factor will be left, for a moment, apart. The aim is to challenge and stimulate evolution; it is not to discourage the development since its birth.

Coming back to the question of Belting, an attempt of reply should be found in considering a bi-focal perspective: the one of museum professionals and the one of society. At present time, within the museological field some of the most popular issues are found within inclusion and participation, tension between private and public, intangible heritage and sustainability. Within society and its development the biggest evolutionary key is certainly the technological progress and its cutting-edge tools, moving together with a growing attention to environmental concerns.

Thus the strict interrelations between museological trends and society are evident: the tendency toward sustainability is the consequence of a better understanding of the needs of the planet. The bio-eco system is now seen as the only way of redemption. A testimony of this theory can be found, for instance, in the *ecomuseum* model, developed in France at the beginning of the '70s by Hugues de Varine and George Henri Rivière: a sort of ecologic museum based on a holistic interpretation of cultural heritage and aiming at the deployment of the local resources of specific communities (Davis, 2011).

A museum, that basically looks beyond the traditional understanding of collection and the collecting practices. Moreover, the need of inclusion can be related to the economic and technological gaps that are responsible of individualism and exclusion, in addition to that intolerance toward differences partly determined by the globalization.

In the first volume The Rise of the Network Society of the series "The Information age: Economy, Society and Culture", 2009, the Catalonian sociologist Manuel Castells extensively defines causes and consequences of globalization, while formulating his theory of flows. This is a brilliant attempt to explain the society organization through a division in layers where the internet and the technological progress play a crucial role. The whole theory is built around the use of the internet and new technologies as a synonym of a real virtual-dimension of a humans' life, where the virtual rapidly assumes the features of the real (Castells, 2009). People surf the web and interact with each other in the virtual space, flowing together their activities and interests.

Fig: The Street Museum, London, 2010

Dropping the subject of some criticism regards this virtual life's inconsistence and furthermore assuming it as an important ground of social exchanges in the second millennium, museums should position themselves in the flow, as well. They already accepted the challenge with the use of, for instance, the Web 2.0 as a participative way of interaction with the public, or the implementation of iPhone/Smartphone applications to improve communication. However, the frenetic technologies' development requires continuous updating for them to remain relevant. One of the last updates is commonly known as AR (Augmented Reality). This is described by Wikipedia as "a live, direct or indirect, view of a physical, real-world environment whose elements are augmented by computer-generated sensory input such as sound, video, graphics or GPS data" (Wi-

kipedia.org, June 20, 2012.) and it is a new evolving concept in the hi-tech world.

A more concise but interesting definition is the one of Lev Manovich, Professor of Visual Art Department at the University of California, who explains AR with the following statement: "Augmented space is the physical space overlaid with dynamically changing information. This information is likely to be in multimedia form and it is often localized for each user" (Manovich, 2002, 2).

This extension of Virtual Reality (VR) makes possible an enlargement of the regular possibilities of elements' visualization in the space, giving birth to an exciting interaction between the real and virtual world, where the former becomes action ground for the latter. But what is the connection between AR and museums? And in which way, if a way exists, can AR be useful for future museums?

Several projects, some of which have been quite successful, have already been launched from museums in relation to AR, mainly within the field of mobile applications - including Powerhouse Museum in Sydney, Australia, the Street App of the London Museum in England, as well as the Netherlands and the city of Rotterdam with the UAR (Urban Augmented Reality). This app of the NAI (Netherlands Institute of Architecture) enables visitors to visualize augmented realities of historical buildings located throughout the city. Another recent project is the one of the Stedelijk Museum in Amsterdam, where development took place between 2009 and 2011 and that was divided into three different sections: ARtours, ARtotheque, AR(t).

AR(t). They respectively treated an aspect of AR, i.e. the interaction between *virtuality (virtual reality)* and reality through a physical space; a new concept of ownership: a virtual and at the same time real ownership of a piece of collection; and the use of AR as canvas for artists. Margriet Schavemaker, head of collection and research at the Stedelijk Museum said about the ARtotheque project: "The Stedelijk Museum holds thousands of artworks in its collection, so why not lend them to the general public? Augmented reality posed the solution. Instead of the real thing, a visitor to the Lowlands festival could borrow a replica in AR. In order to make it an interesting user experience, the visitor could download the artwork to his/ her Smartphone and position it anywhere on the festival premises" (museumsandtheweb.com, June 19, 2012). The Stedelijk AR project aimed to investigate some of the possibilities offered by AR, while involving the museum collection, inviting young artists and designers to share their own works and turning the visitors in AR curators/ narrators in themselves.

Bringing an AR artist within the museum walls furthermore means to bridge both physical and virtual world in the museum setting. A future museum could become, in this way, an additional layer to live an experience. During the previously mentioned conference of Facing Forward: Future of Museums, an animated discussion arose around the possibility for museums to totally disappear, because of the increment of virtual reality and the digitalization of, for instance, museum collections.

An example of digitalization that supports this virtual access to collections independently from museums is the Art.sy website. "Art.sy is a new way to discover art you'll love, featuring work from leading galleries, museums and private collections around the world. Art.sy is powered by "The Art Genome Project", an ongoing study of the characteristics that distinguish and connect works of art. Art.sy evaluates artworks across 800+ characteristics (we call them genes) - such as art-historical movements, subject matter, and formal qualities - to create a powerful search experience that reflects the multifaceted aspects of works of art. Art.sy is led by Carter Cleveland, a Computer Science Engineer from Princeton University with

a passion for fine art, and Sebastian Cwilich, a former executive at Christie's Auction House and Haunch of Venison Gallery. Art.sy's Senior Advisor is John Elderfield, Chief Curator Emeritus of Painting and Sculpture at the Museum of Modern Art, New York" (Art.sy, June 15, 2012). Though the focus of the website is exclusively related to art, art.sy is a great example of the innovative way of democratization and sharing of collections, whilst merging the public and the private together. However, there is also a step further.

Reimagining museums is the title of an article published on the 30th of May 2012 in Museums Association, a network for museum professionals that begins its argumentation with the following provoking question: "Our schools and libraries are being radically re-imagined for the digital age, but what about our museums?" (Museumassociation. org, June 1, 2012). The aim is to present and explain the functionality of the last born in the Google family: the Google Art Project. This is a website that enables visitors to explore the whole art world simply by sitting in front of their own computer.

"A small team based in London persuaded more than 150 museums from around the world to share more than 32,400 high-resolution images beyond their own institutional boundaries. This is a really big deal. For the first time in history it is easy for non-specialists to explore and closely examine art from museums across the globe on a single website. There have been other initiatives that have moved in this direction, but never with the scope or functionality of the Google Art Project. The Art Project isn't finished. It needs more museums and more art. It needs improved search and filtering tools. And the public needs better ways to discover and contribute new narratives about art's history. Despite these weaknesses, the educational potential is tremendous" (Museumassociation.org, June 1, 2012).

The importance of the Google Art Project is clear as well as its participative character and it wants to be an attempt to answer to both the needs of inclusion in large scale and the future of museums.
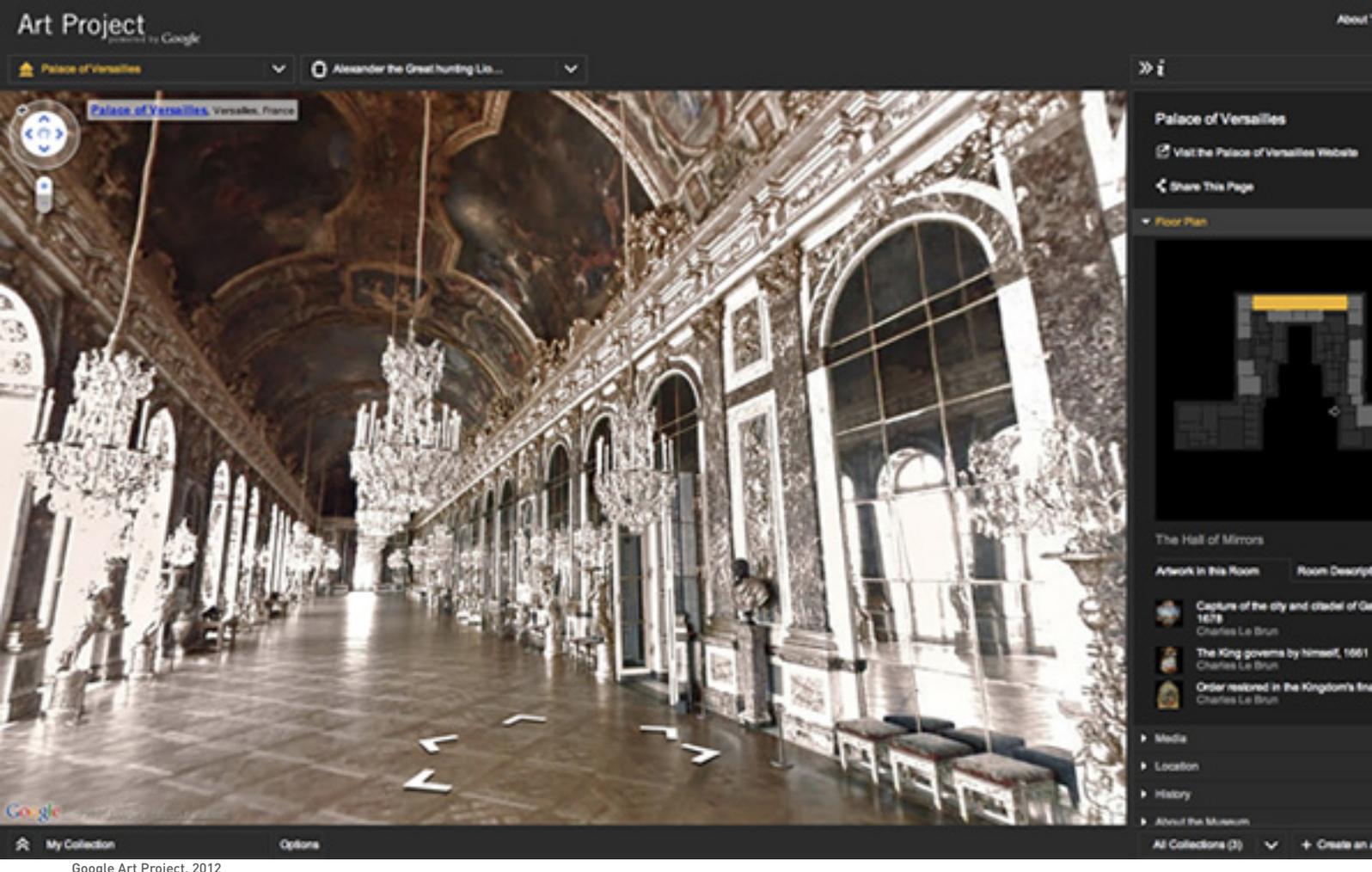
Google Art Project, 2012

On the other hand, is this going to be the real landing place of future museums? Is this one the museum's model that we really want? A completely virtual platform where walking just moving a mouse around? A museum with no physical walls? Case study on this regard is the MINI Museum of XXI Century Arts. Also known as MMAXXI, it is an absolutely original model of museum that does not have any walls and does not have any fixed location. The MMAXXI is a sort of pop-up museum for excellence, conceived to go over the traditional museum's definition itself. The project director is Italian contemporary art critic and curator, Domenico Quaranta, well known in the international world of New Media and Video art as one of the major experts of the sector. The metaphorical building of the MINI Museum is "a 7'' digital photo frame bought on eBay equipped with a 4GB pen drive. [...] It has been designed to store and display the art of the XXI century - that is art that takes, has taken or can take digital form, at some time in its life, and can thus be stored on a USB pen drive and displayed on a digital photo frame. The MINI Museum will travel from node to node around a network of artists, and will host temporary solo shows by the artist owning it at the time. All the artworks shown in the *MINI Museum* will enter the permanent collection of the Museum itself. The Museum will return to the Director when there is no more storage space left" (Theminimuseum.org, June 15, 2012). At a first and not very attentive analysis, the message launched by the *MINI Museum* seems to be that museums in general (and art museums in particular), no longer have reasons to exist in the technological era and, especially, in relation to the most contemporary expressions of art. The MINI Museum of Domenico Quaranta seems to point out that museums no longer are the right places for the showing and sharing of contemporary art. However, a deeper reflection highlights how this previous conclusion can be just partly true. In fact, as the already quoted German art historian and theorist Belting wrote in his publication *Contemporary Art and the Museum in the Global Age*, the definition of contemporary art is more frequently reduced to the Western art world, with no attention to the non-Western art and its intangible practices, far away from the latest technologies' expressions (Belting, 2006).
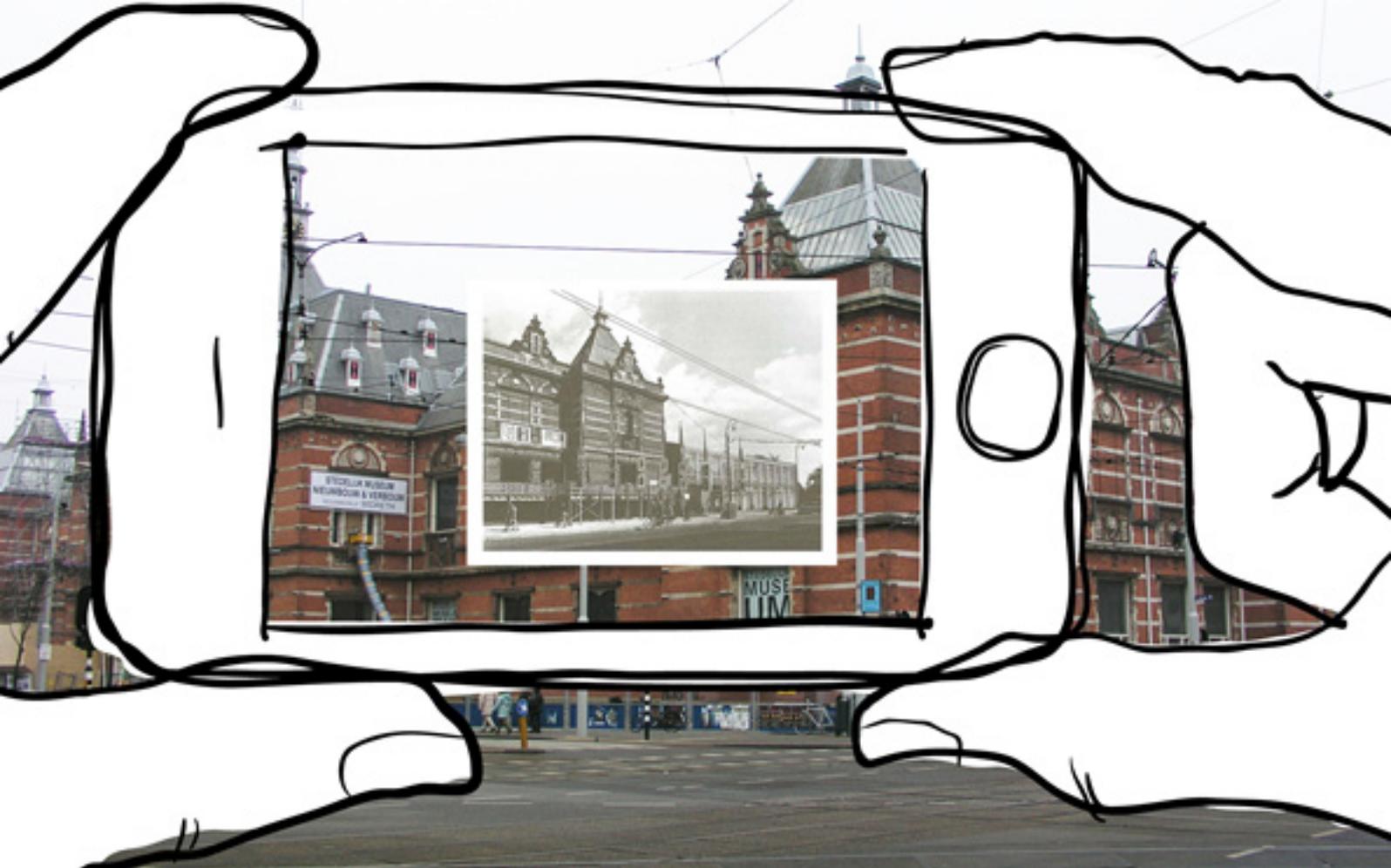
ARtours, Stedelijk Museum, 2010

Nevertheless, the technological progress cannot be stopped, neither ignored, although its diffusion regards the Western world more than the non-Western world. The tendency towards the virtual reality to the detriment of the physical reality is a factual date, but being afraid of a total disappearing of museums is quite extreme. Thus, in occasion of the previously mentioned Facing Forward conference, Iwona Blazwick, director of the Whitechapel Gallery in London, wisely said that museums do not have reasons to disappear just because of the growth of virtual reality: the act of going to museums still represents the physical act to meet other people as well as to orient ourselves in a city that, for instance, is not our own (Blazwick, 2012).

This is an interesting statement though it could be argued that not everyone needs to meet others in a physical space and that virtual reality is easily taking the place of reality, leaving institutions such as museums to slowly disappear. Here the Augmented Reality concept shows its importance. AR is not fake reality. AR, as the definition itself suggests, is an augmentation of the reality and

it needs the presence of a physical space to be applied. Already in 2002 Lev Manovich had predicted that museums and artists would take a lead in testing out the augmented future space, claiming that "having stepped outside the picture frame into the white cube walls, floor, and the whole space, artists and curators should feel at home taking yet another step: treating this space as layers of data. This does not mean that the physical space becomes irrelevant; on the contrary, [...] it is through the interaction of the physical space and the data that some of the most amazing art of our time is being created" (Manovich, 2002, 27). In addition, AR in museums can undoubtedly be implemented in different manners.

For instance, can AR be a way to create a wider inclusion? As the Stedelijk AR project demonstrated, the use of Augmented Reality enabled visitors to concretely play with the museum collection and create new personal stories in relation to it.. AR could be a way to reach new visitors outside of the museum space, while inviting them to use the museum setting as a playground for their own AR performances.

Furthermore, the contribution to the Experience Economy theory that AR can bring is unlimited. The theory, in fact, developed by B. Joseph Pine II and James H. Gilmore at the end of the '90s is a service oriented theory based on consumers' participation and focused on consumers' need, operating across physical and virtual worlds where services look like commodities. Experience Economy has been recently applied to the museum field with the aim of involving the public through the benefit of the experience's value. Moreover, AR in museums could work as support as well as artifact in itself. AR is augmentation of reality and, at the same time, it is one of the latest shapes of contemporary art.

The Mini Museum of XXI Art, 2010. Image courtesy Link Art Center

The potential of AR is huge and its link to the art world is relevant. However, will the AR's implementation cause a more solipsistic approach to the all museums' services? Will visitors start to act in a more individualistic way in the learning and living of their own museum experience? In addition, will visitors be reached in a really inclusive way?

Not everyone owns the proper devices that enable the AR fruition. Borrowing again the Castells' theory of flows and looking at the other side of the coin, the danger for those people that cannot have an easy and direct access to the "new augmented world. theory of flows and looking at the other side of the coin, the danger for those people that cannot have an easy and direct access to the "new augmented world" is to become increasingly disconnected. And what about the traditional mu-

seum functions? Could the implementation of AR threaten one of the strongest museum pillars, i.e. the value of collection, leaving the stage to a new dimension, such as the one of non-collecting institutions? Will, in substance, the implementation of AR, change the museum's structure in itself? The research field on this regard is stimulating and wide. Within the big panorama of contemporary practice and approaches to art, AR is a weak signal for a new revolution. It is a looking forward: from augmented reality to augmented museums.

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Miriam La Rosa

Miriam La Rosa is a Master student of "Museology" at the Reinwardt Academy in Amsterdam, the Netherlands. Since September 2012. In August 2011 Miriam moved to Amsterdam to start her museological career at the Reinwardt Academy. Between 2011 and 2012 she attended several workshops and clinics organized by the Reinwardt Academy. From May to July 2012 Miriam did her Curatorial Internship at the Van Abbemuseum in Eindhoven. Miriam is a Curatorial and Research Intern at the Stedelijk Museum in Amsterdam where she currently lives and works on her next research project for the Master thesis."

Skulpturenpark Berlin_Zentrum", 2008 © KUNSTrePUBLIK

"EXELENT LOCATION"

In Berlin Mitte, property near the Forein Office. Real-estate Prose as a Locational Disadvantage

by Martin Conrads

I.

Later, as he sat on his balcony eating the wild boar, Dr. Maitland reflected on the unusual events that had taken place within this huge area during the previous three months.

The wasteland lay under the morning sun. Dr. Maitland stood at the balustrade surveying the plants and wildlife. From the building's top stories, one could faintly hear the sounds of trailing librettos (Bizet! "Carmen"!) emanating from the scorched auto wrecks: "… downtown wastelands must never be developed again. Municipal real estate must take into account the needs of its residents…" These were strange voices, like a foreign language, especially because their concerns were outdated and no longer relevant to the present day.

Between Luisenstadt, Spittelmarkt and the Köpnicker Quarter, nature had re-conquered just about everything. What remained were ruins, old ones and new ones, and the librettos. "Urban development requires time," he thought and chuckled. Dr. Maitland recalled a brochure that he had once received in the office mail: "…when you consider the strip of land cleared for the Wall, and realize that 20 years after its collapse only a few properties have been resolved in the sense of a permanent urban and architectural solution…"

Ok... and then what?

That was 20 years after the Wall. And now? The area had resolved itself a permanent solution as if of its own volition. Almost.

The delicious boar meat began to have an effect, triggering Dr. Maitland's memory. The final sentence of the text came back to him: "It is astonishing that some areas only now, 20 years after the Wall, are being given a definitive planning solution." -Ephraim Gothe, City Councilor for Urban Development.

Although...

II.

The cold wind that carried the old, familiar voices to Dr. Maitland's ear blew a newspaper onto the balcony. Dr. Maitland picked it up, a weekend supplement dated xx/xx/20xx. He leafed through, coming upon a photo of a building that vaguely reminded him of days past. It accompanied a column, which he read in a low voice:

"One would really like to know how many genuine requests were sent in response to the particular ad, which just a few days after being published was removed from the Internet. In autumn of 2009, the Temporäre Kunsthalle Berlin appeared as a property in Berlin real estate portals. It was advertised as an "Artful, inspiring loft in prime location, BLN Mitte. Room 822.00 m2, EUR, Schlossplatz 1, 10178 Berlin." This offer was either a resourceful PR move geared at overcoming a conceptual, curatorial and communications crisis, which via a strategic detour attempted to lure both Mitte-loving seekers of lofts and inspiration, and journalists with affinities for the Internet, to the Kunsthalle's events and exhibitions.

Or, it was the result of a quasi-interventionist practice in the tradition of net-activism, which referred to specific problems of location policies. If a combination of these possibilities is at all conceivable, it is because in the form of a real estate ad that advertises a cultural and locational advantage, a terrain of current profit agreements was chosen that, analytically speaking, had hardly been taken into account. For in real estate portals, a prose has emerged in recent years which, needlessly and more explicitly than anywhere else, points to how the locational advantages of the culture business and those of the real estate business overlap—a development which has otherwise been swept under the carpet in a coy, strategic, naive, or calculated way.

Hence, one can find descriptions in the usual portals (or on the property pages of real estate developers), in which quality of life and distinction is to be addressed and created through urban exclusivity, on the one hand, and proximity to culture, on the other – and if not in the sense of a benevolence taking both the culture business and the real estate business into consideration, then at least for the purpose of a system-stabilizing win-win situation."

Bollocks. Cultural lingo of yesteryear. Dr. Maitland looked up and let his eyes wander across the vista. His memory came back in fragments. He recalled his commission, the language, and office that had been "resolved as part of the permanent solution." Dr. Maitland was one of eight staff members of the Liegenschaftsfonds [Real Estate Fund], a department misleadingly disguised as "KUNSTrePUBLIK e.V.," which was crouched in the showroom of the Fellini Residences. Its task was to inspect international real estate ads, and assess whether they contained information and strategies that could be beneficial to the Urban Development-Senate Administration.

Outwardly, the impression of an artists' group was conveyed. They played with this camouflage with a program of exhibitions and accompanying press texts that were often deemed absurd by their audience: "Located in a field of tension between the Fellini Residences showroom, a model of a luxury condo, and the construction site of a commercial high-rise, the artist will organize the building of a scale model of Skulpturenpark Berlin_Zentrum's vacant land. The miniature replica will be built on-site in a temporary, modular container by workers from the Job Center's One-Euro-Worker program, a city initiative that sets unemployed residents to the task of constructing a miniature park version of Berlin. The installation will be accompanied with interviews with the workshop's staff."

Albeit fun, these actions were intended only for keeping up appearances. The primary focus of Dr. Maitland's undercover department was on gaining insights into the relationships between the bourgeoisie, architecture, and religion as hinted in real estate advertisements. For the Liegenschaftsfonds, interpretations of these blurbs promised to shed light on the current market situation – information that could not be statistically attained, and to which collaborative cultural workers, so-called creatives such as Dr. Maitland, had been engaged. The task of Dr. Maitland's department was to crack the code of these ads, from which the Liegenschaftsfonds and Senate Administration promised to reap billions.

Skulpturenpark Berlin_Zentrum", 2008 © KUNSTrePUBLIK

The copy for these ads included offers that were, for example, ideal for those who prefer a quiet night's rest, but desire to be only a stone's throw away from the action, with its attractive, cultivated, and half-authentic restaurants, museums, operas, symphony halls, and of course, the always popular, luxury department store and pleasure temple, Lafayette.

With the convenience of accessible public transport, they could be everywhere quickly, from KaDeWe, the other luxury department store, to the airport and back again. Friends would visit them often, and they could enjoy their well-earned leisure time.

Dr. Maitland continued reading the paper, but had difficulty concentrating on the text: "Stylistic howlers and quasi-Freudian typing errors belong to the standard of this new prose. One can also find examples that get their lines right, but they appear all the more decisionistic:"

At least this much was true, Dr. Maitland recollected.

The Monbijou Park was just a few steps away and the cultural hotspots such as the German Staatsoper Unter den Linden, Museumsinsel, and Lustgarten were all in the immediate vicinity. The proximity to public transport was exemplary; nearly every place in the city could be reached within a short period of time.

The sounds from the wrecked cars brought him back to the balcony. He continued to read:

"The intertwining interests of the spheres of culture and the real estate business are particularly conspicuous with the now trendy principle of cultural "theme real-estate", as the advertising prose of the "Musikerhaus" [Musicians' House] seeks to demonstrate with simple examples:"

The rest was missing, torn out of the newspaper. Dr. Maitland thought about what the author might have been arguing at the time. The following thoughts mingled with his memories: The political, as well as historical center, could be reached by foot in 7 to 12 minutes (City Hall, Embassies and Ministries, Staatsoper, Komische Oper, Jewish Museum, various corporate headquarters, Gandarmenmarkt, Friedrichstraße, Museum Island, Nikolai Quarter and the Cathedral).

Berlin-Mitte offered many reasons for which to purchase a piece of it.

For example, the energy-saving buildings like those at Neue Grünstrasse 15/16 had certainly been a sensible investment in the future; and if they proved to be in a prime location, the investment was securer than gold. Additionally, if one lived in a theme-oriented property like the "Musikerhaus", surrounded by the pleasant company of cultural workers and creative people, this was another argument in favor of their offers. One could feel free to pursue his or her musical pleasures at any hour of the day. No noise or decibel could lead neighbors to reach for their broomsticks – nor would street noise disturb their work. They lived their ideas spontaneously. Thus, they were located in the best of neighborhoods. They shared and enjoyed their residential community with other creative people, who not only placed great demands on their art, but also on their real estate. Demands for which the "Musikerhaus" was built. And not least, they benefited from the rise in property values due to the revitalization of the Spittelmarkt quarter.

III.

Dr. Maitland tried to recall when the prose of the advertisements took a different turn, when other topics crept into the sales pitch – contents that caused the Liegenschaftsfonds and Senate Administration headaches:

U-Bahn station practically at your doorstep. The car in the underground parking lot accessible via lift. A quiet street in Berlin-Mitte with a large garden courtyard and from the penthouses a view all the way to Potsdamer Platz. You are welcome to compare the prices of our penthouses with those of our competitors (i.e. Fellini Residences).

Texts like this must have been written at the time when Google Maps mash-up portals began to replace newspapers once and for all. It was when locative portal applications, such as brennende-staedte.com [burning-cities.com], tended to reveal more about the potential dangers posed to limousines, which with due negligence did not take the elevator to the basement parking lot:

Via brennende-staedte.com:

- 08/11/2007: Alte Jakobstraße: Opel Meriva
- 12/08/2007: Neue Grünstraße: Mercedes
- 08/11/2007: Neue Jakobstraße: Renault Megane
- 04/25/2008: Alte Jakobstraße: Mercedes
- 12/06/2009: Sebastianstraße: Audi
- ...
- ...

These portal applications added the accumulated data from older apps such as the Berliner Mietspiegel, the Sozialatlas, the Umweltatlas, Immobilienscout24, Brennende-Autos.de, Rottenneighbor, Crimeblips, Blaulicht-Kurier, and more. Together they destroyed, algorithmically and in actuality, the suspected connections between the bourgeoisie, architecture, and religion. They also rendered Dr. Maitland's department, which had been dedicated to interpreting the texts, redundant.

From this point on, Dr. Maitland's department wrote the very same real estate prose it was commissioned to interpret.

IV.

Dr. Maitland summed up the recent history. Over a longer period of time, desolate but desirable lots with exceptional ground plans were more often perceived as unattractive locations alongside shopping malls and service roads, rather than as shared and collectively owned space. Since 1989, Berlin had been an exception. But when the rest of Europe recognized the use of collectively owned vacant lots in the first third of the 21st Century, Berlin lagged behind for decades, clinging to the compulsive building tendencies of its urban development policies. This unfortunate aberration was recognized late, but not too late. Despite intentions to build, almost nothing had changed regarding the "wasteland-vacancy" of the former Wall strip. It therefore came as no surprise that the main reason given by the governing mayor for the reconstruction of vacant land in this area, "in the context of CreativeCityBerlin," was suddenly an urban-aesthetic choice. It was to "revive a gap and create a visual closure for ribbon development."

Skulpturenpark Berlin_Zentrum", 2008 © KUNSTrePUBLIK

Dr. Maitland termed this the "urban development of aesthetic appearance." Now of all times, when lots stood vacant, Berlin contemplated reconstructing them.

A few months after the mayor's speech, a razed Potsdamer Platz was renamed the "Wall Strip Project". On the land where SONY Center once stood was now the "Wall Strip Center". sections included: "The Wall Garden" along Chausseestraße, "Wall Strip Quarter Mitte", and the "Wall Strip Promenade". Once again, undeveloped and left to nature. Other sections included: "The Wall Garden" along Chausseestraße, "Wall Strip Quarter Mitte", and the "Wall Strip Promenade". Once again, undeveloped and left to nature.

Only the former "Fellini Residences" (now the "Berlin Wall Strip Wasteland Memorial") were preserved in remembrance of a time when one might still attempt to develop an abandoned lot. Dr. Maitland was one of 750 game wardens who now patrolled the reclaimed wilderness. He always found it an ironic twist of fate that he, of all people, lived in the residences. In the first place,

the residences were built in order to prevent the cover of Maitland's department from being blown. Critics doubted that the cultural activities of "KUNSTrePUBLIK e.V." would actually enhance the surrounding area of the allegedly planned "Fellini Residences". There had been a threat that the entire operation would be exposed, thus forcing the Senate Administration to erect the 70 luxury apartments with their historicizing facade, more or less, overnight. The public outrage incited by this inane building led to the appearance of hundreds of wrecked cars, and forced the Senate to conform to European guidelines for the reconstruction of vacant lands. The "Berlin wasteland development policy" was upended.

Only the eight employees of Dr. Maitland's department were aware that all the advertising copy for the "Fellini Residences" originated from them. In order to fuel public resentment against this unplanned and entirely fictitious complex, Dr. Maitland's department altered the online apps operated by the bogus company behind the residences (a front for the Senate), to such an exaggerated degree and without consulting their

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client (also the Senate), that a revolt was all but preprogrammed. Internally, the department dubbed their method with a touch of in-house humor, "The Vespa Promise": "Discover Italy.

In the Middle of Berlin. Hardly any other metropolis in Europe has been so strongly influenced by Italy in its architecture as Berlin. Many poets and architects of the 19th century allowed themselves to be inspired in Italy and made the city on the Spree into an "Italian enclave". This can still be sensed today. The densely rowed series of richly decorated facades, rattling Vespas and the many espresso bars evoke an Italian feeling. Only one thing is still missing: the Fellini, a luxurious block of apartments with an Italian way of life. It closes a gap, architecturally, historically and culturally. In its shape and colour, its appearance is reminiscent of elegant Italian townhouses. The curved court façade is inspired by the auditorium of a theatre. In its centre, there stands a splendid stone fountain. The inhabitants are participants in this atmosphere and enjoy the relaxed Italian charm of their surroundings. The quality and first-class location of this property also provides relaxation

– it promises a high increase in value in one of the most dynamic property markets in Europe."

Dr. Maitland continued reading the paper, but had espresso bars evoke an Italian feeling. Only one thing is still missing: the Fellini, a luxurious block of apartments with an Italian way of life. It closes a gap, architecturally, historically and culturally. In its shape and colour, its appearance is reminiscent of elegant Italian townhouses. The curved court façade is inspired by the auditorium of a theatre. In its centre, there stands a splendid stone fountain. The inhabitants are participants in this atmosphere and enjoy the relaxed Italian charm of their surroundings. The quality and first-class location of this property also provides relaxation – it promises a high increase in value in one of the most dynamic property markets in Europe." As the official game warden of the "La Dolce Vita", the section of the Wall strip now surrounding the residences, Dr. Maitland felt deeply satisfied about being the only inhabitant of the memorial. This was also true in regard to his passion for wild boar. When he had eaten it would be time to rest, and to tell his stories.

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Martin Conrads

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Telenoika Audiovisual Mapping @ Macau Arts Festival - (China) - http://www.telenoika.net/

SPATIAL AESTHETICS

An investigation into the art and space

by Laura Plana Gracia

Influenced by Adorno and Benjamin (Benjamin 2002), this paper focuses on the Politics of Space. In particular, it concerns Psichogeography, defined by Guy Debord (Debord 1977; Anon. 1960) as the study of the precise laws and specific effects of the geographical environment– intentional, organised, or not– on the emotions and behaviour of individuals. Ian Sinclair (Sinclair 2010) is one of the most recent and contemporary critical theorists in psychogeography based in London. His projects have analyzed new landscape and the Olympic zone, resulting in one of the most critical works today.

As a researcher based in cartography, mapping and geopolitics, I have concluded that aesthetics is required to describe this particular art. In that sense, it is urgent to build, construct and spread a new way of thinking about art. I have found that Spatial Aesthetics is one of the best ways to think critically about the situation of contemporary society. Following this, as Benjamin did in his Passages (Benjamin 2002), each place is considered a space characterized by a specific actor (citizens, tourist, walkers ...) or a non-actor (defined by Joana Erbel in *Critical Cities, Ideas, Knowledge and Agitation, Emerging Urbanist* (2009), as the "factors in public space that are not human but determine the structure of the place"). Also, Spatial Aesthetics could be defined as the sense of place as material, like in Saskia Sassen (S. Sassen 1999), when she describes capitalism as potential earth buyer. Because each place holds an actor, and furthermore a material.

After this common sense consideration of how to think critically of our contemporary society, I wish to provide a discussion on where this art theory departs from. The notion of public space in the definition of classic sculpture or monuments is actually very far from the idea of the renaissance artist as a builder of the city. Contemporary mapping, cartography, geopolitics and psichogeography have built an urgent need to think art after the avant-guard, abstraction and performance art, and also cinema; the urgent need to understand society under the influence of machinery, electronics and the evolution of communication tools and devices. Psichogeography was a movement of critical

urbanism, but it also represented the beginning of political culture.

PART I
SPATIAL AESTHETICS.
The ideology inside the city. Landscape versus public space.

Cityscape, anti-monument, public and social sphere are concepts that define contemporary artistic practices concerned with the development of the public image of the city. The sculpture and public software are influencing the ideology and the education on the citizens. That necessity to transmit knowledge and communication generates practices of appropriation of public space. At this point, public art programmes let social and artistic practices to recover the historical and local memory working with buildings and monuments that have a value.

Those practices are based in praxis and also in strategies of communication through a direct experience. Other branches of this historical and social aspects of the current artistic discourse is one that develops from the psychogeography, cartography or anti-monument. Strategic actions, models or utopian construction of public space, as well as atypical figures in the museum space make the ancient artistic practice of landscape being a model of knowledge for the development and improvement of the society. This practice of art will be deciding how to preserve the heritage and memory. There is a fact that the social landscape is built as a fictitious imitation of nature through architecture and, even more, through screens and electronic surfaces (Erbel 2009).

Julian Oliver

In the way they are built, they face us to a daily confusion. The support and surface where media and the advertisements are inserted are expression of daily life existence. But, as Adorno (Adorno 2004) observes, when the subject, inside the landscape, decontextualizes their images, they acquire the significance of ideology. Media and advertisements build the ideology of the masses, expressing the significance of contemporary life. In that way, the participation in the construction

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of the collective imagination as a landscape is a metaphor and symbolism of the real society, the tasks of artists among other social agents. All must agree that the representation of the collective imagination is influenced by the consumer society, through the strategy of seduction. This simulacrum of reality consists on an appropriation of techniques of advertising and tourism.What Adorno described as the process of constructing the psychology of masses by the identification of the product (the symbol or image of power through propaganda and reproduction technique), is currently defined by Baudrillard as simulacrum (Baudrillard 1991; Baudrillard 1995). Here, the proposal is to treat art as a document of reality, not a simulacrum, a palliative method for certain social practices.

The concept of art as a document of reality focuses on the memory and information of the site, to create environments where the documentary falsification and speculation are excluded. In the last century, the public space has been invaded by security systems (mainly cameras) that are used as devices that act as coercive effect of

power (Foucault 1995), and representing the monumental forms and hegemonic discourse of power in history. Along with advertising panels, security cameras and devices of control build an urban landscape dominated by surveillance, where the subject is denied to question and define a nature of society (Deleuze and Guattari 1988). In that order, Critical Urbanism challenges the traditional monuments of history and public policy in defining monuments. The arch of triumph, the public sculpture or the media installation in open zones are ideological illustration for the social participation for the construction of the city.

Stanza

Following Saskia Sassen (Sassen 2011), the place as a material becomes the paradigm to read the inside of the city. The most valuable material is what Negri describes as immaterial work (data and information producing a new digital order). Outside post-cities, outside borders of capitalism, material research and mines are re-discovered by financial giants. In that way, when you deal with Spatial Aesthetics you consider a work of art that

belongs to the city, post-city or any other place, but you are dealing with a cultural policy, defending the communal interest of art inside the public voices of society. The *agora publica*, where the *res-cogitas* of the common citizens (the senso comune of citizens) is expressed thorough newspaper and fences that where conquered years ago by advertisements and brands. Conversely, artists are pushing against this simplification of commodity benefits and consumerism habits. It is thought the res-cogitans as material thought, a neuronal network. According to Roy Ascott and Peter Weibel, citizens, artists and public institutions have to build this social network, the *noosphère* (de Chardin 2010), based on neuroscience as the energy of thought. Using big screen, data projection and public networks, public space will be soon invaded by de-constructed electronic surfaces expressing the global embodiment.

PART II
TRANSITORY PRACTICES IN EUROPE.
Translocal Europa. Borders in the community.

The rapid urban transformation in Square Mile London is an example of how it is turning into the Silicon Valley II. The new centre of the city is turning into a digital city, characterized by the digital generation. For Žižek (Žižek 2002; Žižek 2005), this belongs to the idea of the end of capitalism, the Post-city, that is, establishing a new order centred on the financial district. But the trouble remains, as Adorno and Horkheimer argued (Horkheimer and Adorno 2007). The homogenised landscape of capitalism doesn't let other voices be heard. Now, the digital post-city is done with capitalism, but the same features remain. One of them is the homogenization under ideological code. The digital city, the post-city is initiating a new digital economic order. There have been critics to the new architecture as it is not enough sustainable. Massive buildings have been detected as precarious for the basic needs they require.

Asymptote

Later in the sixties and until the beginning of 21st century, capitalism represented the homogenization of liberalism and neo-liberalism. The counter-resistance had alternatives from Marcuse and

Saaskia Sassen to Bourdieu (Marcuse 1987; S. Sassen 2001). For them, the theory of the politics of the sign aligned language to the order of capitalism as a system of production of goods. As Marx states, there is a need for a critical practice outside of the cycle of mass production and that is critical and improves massive movements. The post-city is the actual moment. One of its main goals is the use of New Media Electronics. As capitalism meets a resistance, there is a common movement based on the idea of the D.I.Y. (do it yourself). Several artists are appropriating social practices from engineering, design, architecture or media communications and are becoming creative workers.

They use workshop facilities at centres such as the V2 in Rotterdam, Medialab Madrid, FACT Liverpool, Constant in Bruxelles, etc,… where they are able to distribute and produce tools and devices for the development of tools to improve communications, environment, data collection, urbanism, environment. They are all mainly against the massive production and Microsoft monopoly. Lots of them are involved in mapping and cartography, but also in the creation of databases, e-phone applications, robotics, internet, etc.

Telenoika

Žižek declares that the end of capitalism could have started 20 years ago with the disintegration of communism in 1989 (Sassen 2001). After this period, the eastern bloc had a financial boom, that reached as far as the UK. Those were also the times of the explosion of digital technologies. French sociologist Lefevre connects that period with the expansion of urbanism thanks to capitalism.

Also the psichogeographers, The International Situationiste and Debord (Debord 2008) declared that the shape of the state come over life, building their form. The Eastern European post-communist countries suffered a spatial and social reconfiguration. Neoliberalism started the privatization of public space during at 90s and the neo-liberal economy of the 21st century created new heterogeneous urban actors, artists and public art projects. Old communist landscape made of large-scale buildings rapresenting

intellectual politicians gained interest from private companies and local authorities. Others were destroyed to avoid concepts such as memory and amnesia. In that situation, the notion of border, nation or country is also being re-signified. For example Greece and the Balkans are ethno-territories, full of minorities, with no borders because their community is spread all over. They used to be marginalised and delegitimized by religious nationalism.

After communism, the end of capitalism and with the rise of the post-city, concepts such as Transnationalism, Internationalism, Globalism, Nation-states, Localism, Post-socialism, Post-nationalism, Localism are becoming common. Each of them is a different notion to be categorised, but all are movements after communism and form of Spatial Aesthetics. For instance, Europe tends to define all-comprising territories: the Eurozone, the Eurocentrism, Eurasia, Mediterranean Europe. All of them are involved in the construction of European policies for a true internationalism.
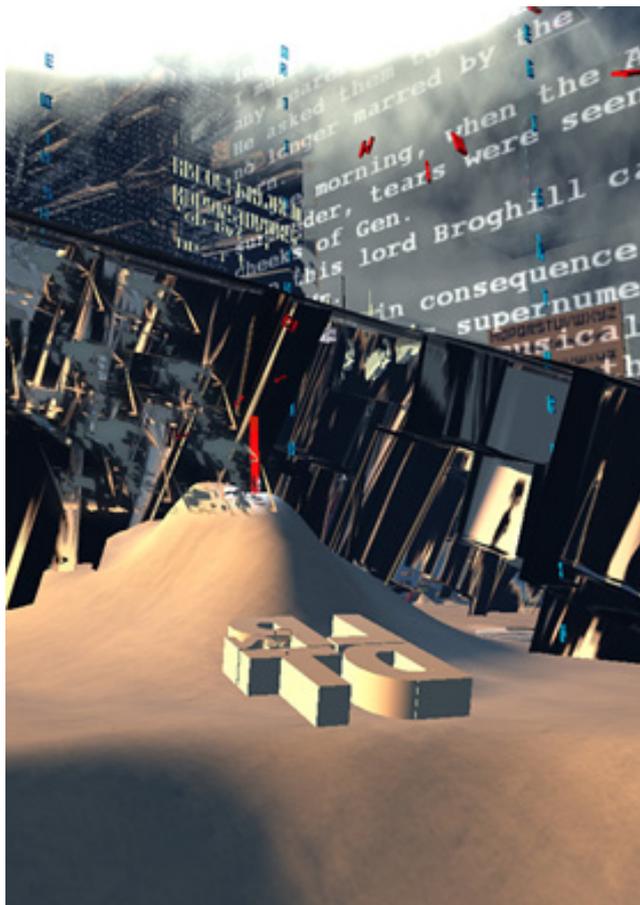
Fig: Roy Ascott. The image of the future city. LPDT (Le Plasir du Text). Second Life installation. http://www.asquare.org/networkresearch/2010/lpdt2 http://lpdt2.wordpress.com/

From Nietzsche to Orwell, Europa has been the main theme for discussion by intellectuals and writers, artists and citizens. It could be said that translocalism comes altogether with the post-city characterised by new media electronics that give us the sense of immateriality, ubiquity, de-

territorialism of communication, allowing to work abroad and in non-places. This should allow more freedom and better communications and economic wealth; it could also provide a way to deal with sustainability and the ecological and climate change problems that machines and technology are promoting.

PART III
ARTIST
Ballettikka Internettikka by Igor Stromajer & Brane Zorman. An example of Transitory Art in Europe

A series of tactical art projects began in 2001 with the exploration of Internet ballet. This project explores wireless Internet ballet performances combined with guerrilla tactics and mobile live Internet broadcasting strategies.

The 10-years project ends in 2011. It's a series of interventions in public spaces: right now it is intensively being prepared for the final Ballettikka Internettikka action in Antarctica, November 2011. The relation between the project itself and the public space is multilateral. Its actions consist of invasions, mostly illegal guerrilla actions (but not all of them), where the artists enter the specific public space and do the artistic action there, a ballet (at the beginning with our own bodies, later with robots). It has illegally invaded various public institutions and public places/structures, like the Bolshoi in Moscow (BI Ballet Net), La Scala in Milan (BI Illegallikka Robottikka), Ljubljana Beltway - Motorway Ring (BI Autto Mobillikka), National Theatre in Belgrade (BI BEO Guerrillikka), Volksbühne toilet in Berlin (BI VolksNetBallet), City Hall toilet for

Stanza - The facade presents the emotional real time state of the city of Trondheim is by using live data, and CCTV images to represent the Nova Building as a living breathing entity.

disabled people (BI RenminNetBallet) plus the Lippo Centre twin-towers (BI Stattikka) in Hong Kong, a factory in Slovenia (and broadcasted live to Plaza del Rey in Madrid: BI Hydraullikka), and construction site of the new shopping mall in Seoul, where a robot was buried (BI Intermenttikka). Lately, robots have been abandoned as far north as they could go (Svalbard, Arctic ocean; BI Norddikka), and as far east (Japanese island Minami Torishima in Pacific Ocean; BI Nipponnikka).

This year the 10-years project is going to end by abandoning the last robot as far south as possible: in Antarctica (BI Antarcttikka). One BI action was also done in relation to the ceremony of igniting the olympic torch in Greece (BI Olymppikka), and in the Port of Hamburg (with two insect robots; BI Insecttikka). Some smaller BI actions were done in places that were not always considered not-so-public. So, the basic starting point was: if they don't let us go somewhere in a legal way, we go illegally, guerrilla style. Later, this guerrilla style changed into a more intimate form (abandoning the robots, leaving them in several extreme places forever).

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The Whale Hunt, , 2007, Jonathan Harris and Andrew Moore - Mosaic. Mosaic mode shows all 3,214 photos simultaneously, arranged chronologically in a large colorful grid. This mode reveals coloration patterns in the photographs over time, signaling the changing environment from New York City, to airplanes, to Barrow, to the Arctic Ocean. Any photo can be clicked and selected.

DATABASE NARRATIVES

Possibility Spaces: Shape-shifting and interactivity in digital documentary

by Janet Marles

Any new medium must resolve its place in relation to narrative (Toffs 2005, 104).

Working digitally allows the "conventional" documentary narrative form to shift from temporal to spatial, from horizontal to vertical, from sequential to concurrent. Digitality also provides interactivity. With interactivity comes a potentially spontaneous, engaged and active audience able to choose how they receive the content. Yet, documentaries need to convey crucial pieces of their narrative for their story to be comprehensible to their audience. The critical question for documentary makers, then, is how to incorporate these new digital technologies, with their potential for innovative narrative structures, and still make a factual story understandable to their audience.

Identifying the Internet as the primary site that has opened up space for digital storytelling Lundby (2008) says,

(The Internet) offered new options to share the "classical" small-scale stories created in story circles at various corners of the globe. The World Wide Web also gave rise to new forms, Blogging, in text only or with video, as well as the social networking sites on the web offer new opportunities to share short personal stories (3).

Examples of these online story spaces will be explored in this paper, along with early television forms, computer specific forms, gallery specific forms and performative forms. This selection of work illustrates the experimentation with digital form that Manovich in "The Language of New Media" (2001) terms "database narrative" and Hayles (2005) calls "possibility space". Both terms help to define the territory in which the form of documentary is shape-shifting as a result of the revolution in digital technology.

Shape-shifting: documentary"s changing form

By the end of the 1990s the aesthetics of interaction, grounded in the video game paradigm, had become a familiar way of doing things in the name of culture. The age of interaction had arrived (Toffs 2005, 8).

Documentary form is being radically re-shaped as it responds to the digital revolution in recording, editing and the emergence of new media platforms that have allowed for more diverse uses of documentary production and distribution. Hight (2008) suggests with increased capacity, cheaper costs, and faster production of digital recording and editing and the subsequent explosion of content distribution and exhibition networks via the Internet, documentary has begun to be quintessentially transformed.

Similarly, historian and new media researcher, Paul Arthur (2008) has identified digital history productions, as benefiting from the "diversification of modes of public access and delivery" (187) brought about by the digital revolution. Further, he claims that digital technologies have facilitated a "democratization of history enabling everyone to become possible contributors to the ongoing process of shaping and reshaping history" (188).

Sorenssen (2008) also advocates the democratic potential of digital media. Citing the example of an eighty-two year old British man who became a YouTube® sensation with his regular video blog geriatric1927. Sorenssen shows how this octogenarian, regularly engaging with a medium considered by many to be the domain of the young fulfills Alexandre Astruc"s belief from 1948 that new media forms would democratise, rejuvenate and liberate media forms, especially film.

For digital documentary audiences this added spatial dimension allows them access to additional tiers of content. It also provides a new position within the documentary as active participant, not simply as passive receiver. Some documentary makers have adapted quickly to these developments, which, while providing new layers of content for exploration of the form, have also required the acquisition of new skill sets and the confrontation of technical and practical issues. Further, there are the added constraints that the digital and online environment brings, for instance considerations regarding file size for storage and playback.

Specifically, as digital documentary changes in form and audience members become active participants in the process of viewing the production, can the documentary producer be confident that their audience will receive vital aspects of the documentary content? If the audience is able to skip around the story space, cherry picking the pieces they want to access, how can the documentary maker be certain they will access crucial parts of the story?

The challenge for producers is to engage with the new skills of the digital revolution yet ensure their audience receives the parts of the narrative that makes their story comprehensible. Documentary makers must adapt and stay in tune with the shape-shifting taking place in the digital documentary form.

"We are entering an age of narrative chaos, where traditional frameworks are being overthrown by emergent experimental and radical attempts to remaster the art of storytelling in developing technologies" (Rieser and Zapp 2002, xxv).

Perhaps what is needed for digital documentary to take advantage of the new spatial forms and interactivity that the digital and online platforms provide, whilst also remaining understandable to audiences, is a combination of narrative modes - linear and non-linear, temporal and spatial, interactive and passive.

Traditional temporal linear narrative

Classical narratives predominantly follow the Aristotelian model of revealing dramatic events, whether they are factual or fictitious, in a realistic fashion using characters as tools to create identification in the audience. As Zapp (2002) says,

The viewer is taking on the role of a voyeur, witness or emotional judge. He or she is immersed in the story by emotional means of identification, as the plot aims to provoke sympathy or antipathy with the characters or draws possible parallels to the viewer"s subjective reality (78).

Dovey (2002) describes this audience identification as a type of transportation, which is achieved through structural temporal devices. "Linear succession, cause-and-effect, is what allows the reader/user to "relax" into the tale. … The reader/user is left with the satisfaction of an experience with beginnings, middles and ends" (143-4). Le Grice (2001) also acknowledges the importance of temporal form in linear narrative and says "narrative is a method by which events – real or imaginary – are given coherence through the representation of sequential connections"(290). Manovich (2002) agrees, stating "cinema … replaced all other modes of narration with a sequential narrative; an assembly line of shots which appear on the screen one at a time"(69).

Consequently, temporal linear narrative became the primary mode of cinematic story telling, yet representing sequential linear time in film does not necessarily equate to chronological story telling. As Rieser (2002) explains "the very linearity of film stimulated a number of conventions to counteract its effect. Flashbacks, jump-cuts, etc. reintroduced fluidity to a rigid medium" (147-8). These conventions may have varied the order of time in the narrative. However, they did not change the intrinsic temporality of the product. The linear, horizontal, sequential and temporal features nevertheless remain.

Emerging spatial non-linear narrative

In our digital era this linear temporality is now being challenged in a more significant way. As Le Grice (2001) points out, the very essence of digital forms is non-linear and in addition the way a computer stores data does not require a linear process or understanding. He says "the computer, which is fundamentally based on what is called Random Access Memory … is the designation of the non-sequentiality of memory addressing – intrinsically opens up the condition of non-linearity"(296). Further,

Solid state electronic systems (machines) achieve all their connections, do all their work, by electronic pulses; even if hierarchic, they are fundamentally non-linear. Whatever is conceived as the unit of data, its storage and retrieval is substantially freed from a predetermined sequence derived from the physically linear conditions of a mechanical

The Shoebox (2010), the Bill's Gully panoramic scene plays in the central viewing frame, over this two yellow squares blink on and off indicating they are active hotspots, below this the Timeline shows one embedded media clip has been played.

medium (both film and video are locked into the mechanics of the linear sequence of the recording medium). Through the Random Access Memory (RAM) structure of the computer, the sequence of retrieval does not have to match the sequence of storage and all address locations are effectively equidistant (282).

Yet Le Grice (2001) also recognises that simply because a film is produced using digital processes, this does not necessarily make it non-linear. He claims, "the current fashionability of the term *non-linear* creates some problem of definition" (289), because although film-makers are now using non-linear systems more and more, particularly non-linear editing systems, these systems are only non-linear in the way they store and retrieve data, however, "the principles on which they (the edited segments) are combined in the finished product conform to linear narrative concepts. The technology allows non-linearity – the concepts remain linear". As Hales (2002) puts it "in this case the technology is not leading to a change in thinking simply a way of getting things done more efficiently and more economically"(105).

Cubitt (2002) highlights the increase in narrative forms through "the rise of the popular press, film, radio and television", yet marvels at the longevity of linear narratives in this digital era stating,

The remarkable persistence of narrative in twentieth-century media can only be apprehended as remarkable if we apprehend the environment in which it is now performed, a landscape of other modes of documentation and dissemination. Crucial among them are forms of data storage and retrieval that are not structures in time, as is the narrative, but in space (105).

Manovich (2006) explains this perseverance of traditional narrative as the predisposition for new technology to mirror the technology it is replacing. He says "one way in which change happens in nature, society, and culture is inside out. The internal structure changes first, and this change affects the visible skin only later" (2). Hence the first car resembled a horse drawn carriage and new media forms continue the use of temporal linear narrative within their spatial non-linear domain. Manovich refers to the inside out phenomenon

Bystander - Kate Richards & Ross Gibson - interactive installation - 2007Part of the Life After Wartime suite, Bystander is a 5-channel interactive software system. The work is installed in a 7-metre-wide pentagonal frame comprised of five projection-screens and surround sound audio which visitors enter – up to 10 at once.

as "uneven development" and claims it hinders our appreciation "that new media does represent a *new avant-garde* of information society even though it often uses old modernist forms". Further he says,

If the 1920s avant-garde came up with new forms for new media of their time (photography, film, new printing and architectural technologies), the new media avant-garde introduces radically new ways of using already accumulated media. In other words, the "new avant-garde" is the computer-based techniques of media access, manipulation and analysis (2).

Manovich gives as an early example of this new media avant-garde the work of a group of graduate students from Helsinki's University of Art and Design. He describes their interactive late-night television program Akvaario (Aquarium) (2000), created for the Finnish national broadcasting company Channel 1, as a "database narrative"

It is ... a narrative, which fully utilizes many features of a database's organization of data. It relies on our abilities to classify database records according to different dimensions, to sort through records, to quickly retrieve any record, as well as to "stream" a number of different records continuously one after another (Manovich 2002, 66-7).

So a work does not become non-linear simply by using digital applications or digital storage and retrieval systems, there has to be a change in the structure of the work from one based on time to one based on space. It is the added ability to move around within the work, to navigate vertically as well as horizontally, to explore spatial relationships as well as temporal relationships and to have access to media components in a simultaneous as well as a sequential way that changes it from linear to non-linear. As Dovey (2002) says,

Hypertextual ways of working... invite us both as authors and users to experience information as a spatial arrangement. We are called upon to navigate the database in order to make sense of what is stored within. Knowledge that may once have been transmitted in narrative form, as a story, novel, report, essay or article, can now be

accessed through a network of links in which a spatial relation between component parts can be preserved (140).

In "The Language of New Media Manovich" (2001) explains the conflict between database and narrative; databases are spatial and concurrent, narratives are linear and sequential. He claims all new media works are primarily databases and that while a database "can support narrative, there is nothing in the logic of the medium itself which would foster its generation" (201).

Hayles (2005) challenges Manovich's analysis explaining neither database, nor narrative are terms that are adequate to explain the phenomenon of interactive digital media. For Hayles both terms, individually and in combination, are too confined. She prefers the term "possibility space", which opens up the arena for "a flexible, wide-ranging framework" through which to position such interactive digital works (1).

Hayles' thesis is that computer generated, database narratives (non-linear and linear) are not at odds with each other or considered to be in a competitive relationship with one another, despite Manovich declaring "why do narratives still exist in digital media?" (cited in Hayles 2005, 2). Hayles argues that the definition of narrative needs to be expanded to the concept of "possibility space" allowing for "known-knowns, known-unknowns, and unknown-unknowns" to coexist within the same project space (4-5).

Database Narratives/Possibility Spaces

The following discussion uses both Manovich's and Hayles' terms as an overarching category to analyse a range of projects representative of shape-shifting in documentary form. All of the selected productions are taking advantage of the spatial dimensions of non-linear narrative, and all are maintaining a dimension of temporal linear narrative, even if this is regarded as quite small.

The delivery and exhibition platforms vary from project to project. However, all productions are digital and all organise their content from an originating database. While some of the producers

may not consider themselves to be documentary producers, all the selected projects have a factual documentary basis on which their content depends. For a comparative breakdown of each project see Table 1.

Ross Gibson and Kate Richards "(LAW) Life After Wartime" (2003) and "Bystander" (2004-9) Australia

Ross Gibson and Kate Richards constitute an example of collaborative artists engaging with Cubitt's (2002) new "forms of data storage and retrieval" within landscapes "of documentation and dissemination" (2) and Manovich's (2004) "new ways of using already accumulated media" (2).

Accessing an archive of crime scene photographs taken between 1945 and 1960 by the New South Wales Police Service in Sydney Australia, Gibson, Richards and their team have created five distinct works between 1998 and the present. These include live performances; gallery installations; web portals; and a CD-ROM with the intriguing titles of *Darkness Loiters*, *Crime Scene*, *(LAW) Life After Wartime*, *LAW Live with the Necks*, and *Bystander*. In this instance I shall refer only to the CD-ROM (LAW) *Life After Wartime* (2003) and the gallery installation *Bystander* (2004-9).

(LAW) Life After Wartime (2003), referred to here as (LAW), is a computer specific work that combines portions of the database of crime scene photographs with haiku-like texts, sound effects, and music files into random sequences initiated by the user. Ross Gibson (2005, 5) says the operating system underpinning (LAW) is designed as a "speculation engine… throwing batches of pictures forward in turbulent patterns" and that "the system gains cohesion according to the history of each investigator"s interaction with the database".

Over time, a set of micro-narratives and mood-modulations accrue until eventually a kind of debatable meta-narrative builds up to account for the entire image-world of the archive. Crucially, each investigator will gather up a different set of micro-narratives and moods and each investigator

will tend toward a larger story in idiosyncratic and personally stamped ways (Gibson 2005, 5).

(LAW) is what Gibson calls a "dramatic database" which explores the non-linear, vertical, spatial relationships *opened up* by the digital revolution. Additionally, he sees the user/viewer engaging with (LAW) as "not a reader or a receiver of this artwork" rather as "implicated as an investigator" whose interactivity enables them to participate in the pace and delivery choice of the process.

This random accessing of images, sound effects, and poetic texts works to place (LAW) as an artwork partially using historical, documentary content rather than a documentary production per se. This may have been the creative choice of the producers who had access only to the crime scene photographs. Most of the narrative details useful to documentary makers - the who, when, where, what and how descriptors - were not filed with the photographs. Gibson (2005) explains,

...(The) crime-scene images are filed in small manila envelopes full of variously-sized negatives; registered on every envelope there are the names of an investigating detective and a police photographer plus a date and description for the particular crime being documented. And that"s it; that"s the extent of the interpretive cues offered by the archive. Although each image is full of stories, hardly any files are "authenticated" with official interpretations. There are no detectives" notebooks, no court reports, no charge sheets, judgements or newspaper articles. The archive is therefore an unruly almanac of Sydney, a jumble of evidence associated with actual people who have been caught in painfully real outbreaks of fate, desire or rage. The pictures lie there awaiting their users. But how to use them when they tell so little that is conclusively true (5)?

Using the same database of crime scene photographs and haiku-like texts as (LAW), *Bystander* (2004-9) shape-shifts the concepts initiated in (LAW) into an interactive installation form within a gallery space. The work morphs into an "immersive environment" with rear and front projection onto multiple screens positioned to create an enclosed viewing space that the audience can occupy.

The two-way digital mechanism of *Bystander* responds to the presence of audience members. As the number of people situated within the installation space increases the faster the images are delivered. Additionally, as the audience members move through the space their actions are fed-back into the computer system, which responds by sending samples of data to match the activity of the audience. If audience members are moving slowly data will be sent to them slowly, if they increase their pace the computer responds likewise. *Bystander* is a good example of an interactive digital documentary production that fulfills both Manovich's database narrative criteria as well as Hayles' definition of possibility space.

Jonathan Harris "The Whale Hunt" (2007) U.S.A.

Jonathan Harris approaches the temporal and spatial dimensions of database narrative/possibility space from another tangent. Describing his work *The Whale Hunt* (2007) as "experimental interface of human storytelling" Harris combines elements of computer science, anthropology, visual art, and narrative in this online documentary photographic work.

Harris and his collaborator, Andrew Moore, recorded on large format (Moore) and digital (Harris) still cameras the experience of participating in a whale hunt with an Inupiat Eskimo family in Barrow, Alaska. The annual whale hunt is a thousand-year-old tradition for the Inupiat whom today are permitted by international law to hunt twenty-two whales per year.

The Whale Hunt database is organized into an online platform around four themed subsets, the cast, the concept, the context, the cadence. Each subset allows the viewer to filter the database through the chosen constraint. Cast selects photographs that contain subjects such as Abe, Ahmakak, 1st whale and so on.

Concept selects photographs according to themes such as blood, boats, buildings and so on. Context enables the viewer to filter the photographs based on the location they were taken such as New York

City, Barrow, Alaska, the Patkotak family house and so on. Finally, cadence filters the photographs based on the *excitement level experienced* at the *time* the photograph was taken such as slow, relaxed, fast, frantic, and racing.

Shot over a continuous seven-day period at no more than five-minute intervals (with the use of a chronometer while sleeping) the database consists of 3,214 still images. The emphasis on continuous recording enables this database narrative/ possibility space to contain a tangible temporal element. Meadows (2003) claims such inclusions are critical for any narrative to be readable and understandable to other people. Speaking about interactive narrative Meadows says,

Stories seem to be a way in which we report to one another on the events of life. We don't need machines to do that. We need individual opinion and perspective (29-30).

Fig: The Whale Hunt, Jonathan Harris and Andrew Moore, 2007, a storytelling experiment.

With the temporal layer in *The Whale Hunt* we are given Harris' point of view (literally) at least twelve times an hour over seven consecutive days. During situations of heightened excitement or activity Harris' perspective is provided even more frequently.

Accentuating this approach the entire database of photographs is represented by a human heartbeat graphic along the bottom edge of the screen. The more excitement experienced during the whale hunt event corresponds to more photographs

taken, and consequently the higher the heartbeat graphic to illustrate this activity.

The Whale Hunt interface can also be viewed in another three modes; mosaic, timeline, or pinwheel. Each mode gives a tiny thumbnail of each image – represented as the average pixel colour for that photograph. In mosaic mode every photograph is arranged simultaneously, in chronological order, as one large coloured grid. Rolling over the grid a magnifier effect isolates individual images, which when clicked can to be viewed as a full image on the screen.

Timeline mode displays all the photograph's thumbnails, chronologically, in a column representing each thirty-minute period of time. The height of each column indicates the number of photographs taken during that half hour period. Selecting any coloured box by clicking retrieves a full sized version of that photograph.

Similar to timeline mode, pinwheel mode displays all 3,214 photographs chronologically separated into twenty-minute intervals.

Clicking on any coloured box retrieves its corresponding photograph. By experimenting with these four presentation modes as well as the four themed subsets, Harris has combined linear and non-linear narrative as well as the users" interactivity into the architectural design of *The Whale Hunt*. Consequently, the user/viewer can access the database narrative/possibility space of *The Whale Hunt* from a variety of narrative perspective points.
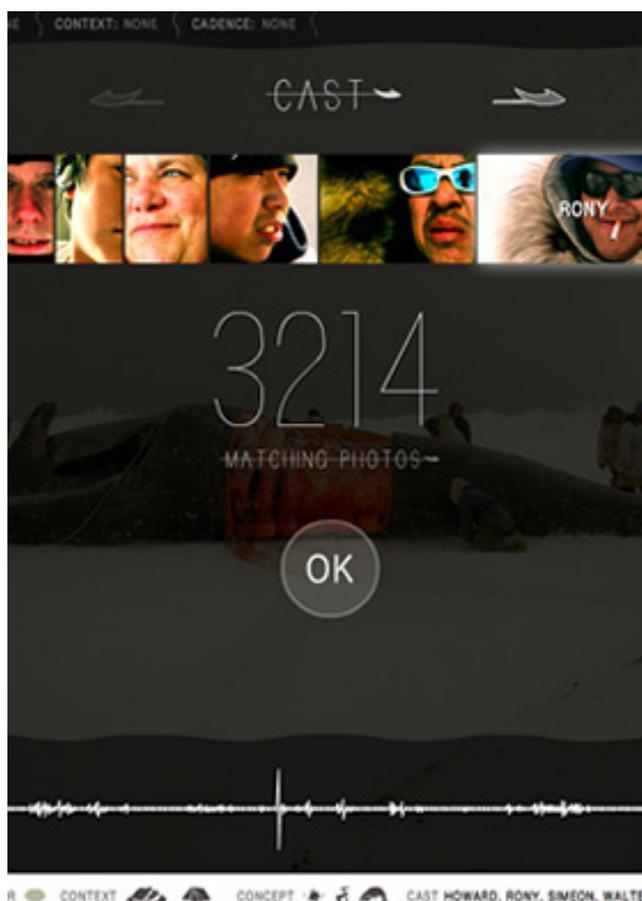
Improvised Empathetic Device – I.E.D. (2005), demonstrated by S.W.A.M.P. collaborator Matthew Kenyon at (DIME-Arts, October 2006) photograph taken by Author

S.W.A.M.P. Matthew Kenyon and Douglas Easterly "Improvised Empathetic Device – I.E.D" (2005) U.S.A.

Another project to add to this list of database narratives/possibility spaces as an example of shape-shifting documentary is a performance piece I observed at the first international conference of Digital Interactive Media Entertainment and Arts (DIME Arts) held at Rangsit University Bangkok, Thailand in October 2006.

Selected to present at the conference under the category of human computer interaction I.E.D. is included here as a documentary in the sense that the primary data for the work is "evidence" which has been "data mined" from the United States of America casualty statistics of US soldiers killed in the war in Iraq. Specifically, the data refers to soldiers killed by *I.E.Ds. (Improvised Explosive Devices)* which commonly use a cellular phone or text pager as a remote trigger for ignition.

The performance piece named *I.E.D. (Improvised Empathetic Device)* uses similar technology and mimics the name as a means to emphasise this connection.

The data is "mined" from icasulaty.org, which collates casualty data from the United States Department of Defence, sitcom, and other sources. Each time a US soldier's name is added to the casualty database a text message is sent to a receiver embedded in the *I.E.D.* armband. The armband is equipped with a needle poised above the skin of the upper arm of the wearer. With each casualty name the performer/documentarist/new-media-artist wearing the armband is jabbed once by the needle indicating the death of one US soldier in Iraq. Simultaneously a computer screen displays personal information concerning the casualty – the individual's name, rank, cause of death, location of death, and hometown in the U.S. One surprising outcome of this performative piece has been the performers' growing awareness of when the data of U.S. soldiers would be released into the public realm. Matthew Kenyon says,

So just like with some of our other projects some patterns began to emerge which became visible,

Improvised Empathetic Device - I.E.D. (2005), close-up of armband showing needle, photograph taken by Author at DIME-Arts, October 2006.

became evident in tangible ways for instance the timing of the release of casualty statistics... we became aware very quickly, finding that the government tends to release this information late on Fridays to avoid the news cycle. So we would find that on Friday afternoon we would feel a growing apprehension and anxiety of the potential of receiving the injections.

The collaborators of *S.W.A.M.P.*, Matthew Kenyon and Douglas Easterly, may be surprised to be included in a discussion of digital documentary narrative forms however I regard this work as a performative documentary using database and non-linear narrative and as a clear illustration of Hayles' notion of "possibility space". Hayles says,

I cannot imagine a human world without narrative, but I can imagine narratives transformed and enriched by their interactions with possibility space in the complex ecologies of contemporary media and culture (29).

The data or content of *I.E.D.* is documentary evidence mediated through electronic and mechanical devices

that connect the human subject directly to the data and from that human computer interaction a narrative is performed.

Bill Lamin and Harry Lamin "WWI, Experiences of an English Soldier" (2006-12) U.K.

An example of documentary adapting to the online distribution platform of the Internet blog is the remarkably well thought through blogsite of Harry Lamin, a British soldier in WWI, who regularly wrote letters home to his family in England. Each of Harry's letters is transcribed and appears as a blog entry exactly ninety years (to the day) after Harry wrote them. Harry's blogsite explains,

The first letter is dated from the postmark as 7th February 1917. As promised, the letter from the training camp will be published on the evening of Wednesday 7th February 2007 - Exactly 90 years after it was written. (7th February 1917 was also a Wednesday, so the days of the week will coincide.)

Harry Lamin's blogsite is the creation of Harry's grandson Bill Lamin.

A retired teacher, Bill, uploads entries, maintains the website, replies to comments, and makes additions to the content of the letters for historical accuracy and clarity. Bill sees himself as a facilitator for Harry's story. Because the audience can read Harry's blog in any order they choose, even skipping whole sections, a brief synopsis on the front page of Harry"s blog ends with the following suggestion,

To find out Harry's fate, follow the blog!

This sentence states Harry's blogsite intention to be read as a journey, for the reader to follow in real-time the unfolding of events as they happened to British Private Harry Lamin during WWI, just as Harry's relatives would have followed via Harry's letters home ninety years earlier.

The by-line of each entry identifies the blog author as Harry. Bill Lamin's involvement is as facilitator. Hartley (2008) describes a similar relationship between facilitator and blog subject in the production of the blogsite The Life of Riley.

Created by documentary filmmaker Mike Rubbo The Life of Riley is the blogsite of 107-year-old blogger Olive Riley. Olive's blog is a flow on project from the documentary film All About Olive (2006) that Mike Rubbo made about Olive Riley's life. Mike refers to himself on Olive's blogsite as "Mike the helper"; he records Olive's dialogue, transcribes it, uploads the text onto the blogsite interspersed with old and new photographs, and video clips. Mike also replies to readers' comments and provides additional information for clarity in italics. Olive died in 2008, aged 108-years-old. Mike continued to update and maintain Olive's blogsite until 2010. Hartley (2008) identifies this type of Rubbo/Riley collaboration as a new hybrid form, part blog (since it uses first person although it is written by someone else), part DST (digital storytelling) transcript, part multiplatform publishing (205).

This approach appears to be very popular with readers, both Olive's and Harry's blogsites receive a high volume of audience feedback. Harry's "Introduction" blog entry, alone, has received eighty-seven comments from readers. The first comment on Harry's blog is dated 22 August 2006

and the last comment (at the time of writing) is dated 29 August 2012, indicating the audience for Harry's blog has been ongoing and increasing over time. In fact, the whole blogsite has received so much audience interest Bill Lamin, and more recently his daughter Catherine, have created a secondary blogsite just to handle feedback and comments.

As a further testament to its popularity, Harry's blog has been picked up as a news worthy item by traditional media outlets. Bill Lamin has been interviewed for newspapers, radio, and television in Canada, U.S.A., Germany and the U.K. Some of these media stories have lead new readers to Harry's blog. Other readers have stumbled onto Harry's blog through Web surfing, as I did while researching information regarding World War I. People from New Zealand, Australia, Argentina, Spain, Portugal, Holland, the United States, and the United Kingdom have all commented on Harry's blog, a testament to its truly global appeal.

In May 2009 Bill Lamin published a book based on Harry's blog. Titled *Letters From The Trenches, A Soldier of the Great War* it is an expanded version of Harry's blog with additions of further information and historical research. The book is a tangible indication of the continued slippage of Harry's blog back into mainstream media.

Yet the book publication has created an interesting situation for some of Harry's blog readers who have purchased the book. They are placed in a dilemma regarding the temporal nature of the blog. Many do not want to read the book until it is revealed by the blog in real-time what becomes of Harry. The majority of Harry's blog readers appear to have subscribed wholeheartedly to the daily diary unfolding of the narrative of Harry's blog.

A number of readers have commented on this aspect of the blog and although they have now bought the book they still want to maintain the suspense set up by the temporal arrangements of the blog and don't want to know the end until it is revealed from Harry's letters. The following are some of the blog comments regarding Harry's audience's response to the book *versus* the blog,

Louise Lewis said...The problem is that we book buyers have been following the blog in "real tima" (sic) for some years, and we don"t wnat (sic) to learn the ending in "advance". My book is waiting on the shelf ready to be read and appreciated in the future when the blog finishes. Nevertheless, I can say how much I appreciate the work and effort you have put into the project and a glance at the book shows it to be handsome indeed. Thank you for all you have done.
May 07, 2009

Anonymous said...You just keep this going. I have been watching this from almost the beginning here in Illinois USA. I will buy the book for my son AFTER this blog is finished because I don"t want to know the end, yet. This is part of my morning ritual. BTW, I looked up the General Beauman, ...interesting dude. April 23, 2009

Harry's blog exemplifies how non-linear spatial narrative, audience interaction, and linear temporal narrative forms may not simply coexist in the same production, but may, each in their own way, actually contribute exponentially to the entire narrative.

Janet Marles' "The Shoebox" (2010) Australia.

My exploration of shape shifting in digital documentary is "The Shoebox" (2010) a recreation of a memory story complete with gaps and absences, inconsistencies and mysteries prompting the user/viewer to engage as both a participant and a spectator.

"The Shoebox" uses six 360-degree panoramic scenes to place the documentary elements in time and place. Each scene describes a location as well as an era from the protagonist's story. Styled as a biography that employs interviews, voice-over narration, re-enactments, animated stills, and primary source documents "The Shoebox" compels the user/viewer to engage with fragments of memory embedded in each panoramic scene that become the threads from which the life story is woven. The user/viewer is able to navigate between these scenes and can randomly choose embedded clips to view.

Once a clip has been viewed an icon representing the visited clip drops into a timeline at the base of the screen. After a precise number of clips have been accessed the timeline fills with the remaining icons and becomes active. The timeline can now be played as a traditional linear movie with scripted beginning, middle and end. This interactive architecture, named "memoradic narrative", was designed to mimic our process of autobiographical memory recall.

Susan Engel (1999) describes memory as a reconstructive process whereby "one creates the memory at the moment one needs it, rather than merely pulling out an intact item, image or story" (6). This implies says Engel "that each time we say or imagine something from our past we are putting it together from bits and pieces that may have, until now, been stored separately."

Researchers such as Engel (1999) and McNally (2003) have found that memory is an amalgamation of activities that utilize a number of sites and cognitive processes in the brain, and these processes are much more complicated, more fragmented, and more subjective than we are inclined to presume. Whilst we tend to think of the process of memory as being similar to recording and playing back a scene in the same way a video camera operates, it is in fact more akin to the processes of capture, storage, and retrieval that a hypermedia platform such as *memoradic narrative* employs.

With *memoradic narrative* the user/viewer interactively chooses fragments of embedded media from a number of story spaces. Once viewed these fragments are reconfigured into a linear timeline that, when played, "tells" the biographical story as a "traditional" documentary film. This conflation of non-linear and linear narrative mimics the process of autobiographical memory recall, which pieces together fragments of stored memories to construct a story by which the person remembering communicates experiences.

Selected Database Narrative / Possibility Space comparative breakdown

The following table (**Table 1**) breaks down the components of each of the previous examples of database narrative/possibility space indicating whether, and to what degree (high, medium, low), each project has employed non-linear and linear narrative devices.

Table 1 also identifies the type of interactivity each project has employed, if any. It divides this interaction into two types. Firstly, audience interaction into the narrative selections or the audience member's ability to navigate through the project at will. The second type of interaction I have identified is audience feedback to the narrative content or the ability for audience members to have input into the narrative content.

The only project (from my selection) that incorporates this second type of interaction is Ross Gibson and Kate Richards' Bystander (2004-9). In this case this interaction only changes the delivery speed of data to the audience. The audience do not have any input into the type of data they will receive and likewise they cannot change the narrative content itself.

Conclusion

These examples of shape-shifting documentaries are a selection of works by documentary makers and digital media artists experimenting with non-linear narrative, linear narrative, and interactivity. Much discussion has taken place as to whether non-linear and linear narratives are binary opposites cancelling each other out and whether narration and interactivity are antithetical (Manovich 2001; Wand 2002). Also, there has been debate as to whether these modes are new or, in fact, have been displayed in different mediums throughout time. Rieser (2002) gives a concise summary when he says:

The frequent assertion that interactive narrative is "a contradiction in terms" centres on the argument that the diegetic space of narrative is compromised or destroyed by interactive engagement with the story; ... this argument is based on a misunderstanding of narrative mechanisms. The active participation of audience is not new nor is it disruptive of narrative diegesis; it is merely incompatible with certain narrative conventions, which have become unduly emphasised by historical accident (146).

What is becoming clear to commentators, documentary producers, and digital media artists alike, is that interactive media is most understandable to users when it incorporates a mixture of non-linear and linear narrative devices. This is especially true when the story content is factual and key aspects of the narrative must be conveyed to the audience for the story to be comprehensible.

As Dovey (2002, 143) states, not only do new media change the narrative from one of a horizontal temporal type to a vertical spatial type but both should be functioning for a piece to be considered understandable. Acknowledging this trend, Wand (2002), quotes Ulrich Weinberg, a Professor

DATABASE NARRATIVES/POSSIBILITY SPACES						
Producer/s	Gibson / Richards	Gibson / Richards	Harris	Kenyon / Easterly	Lamin / Lamin	Marles
Project	(LAW)	Bystander	The Whale Hunt	IED	WWI Experiences of an English Soldier	The Shoebox
Year	2003	2007-9	2007	2005	2006-9	2010
Country	Australia	Australia	U.S.A	U.S.A	U.K.	Australia
Delivery Mode	CD-Rom	Gallery Space	Online	Perform-ance	Online Blog	Online
Non-linear Narrative spatial concurrent	YES high	YES high	YES high	YES high	YES high	YES high
Linear Narrative temporal sequential	YES low	YES low	YES medium	YES low	YES high	YES high
Audience interaction in narrative selections	YES high	YES high	YES high	NO	YES high	YES high
Audience feedback to narrative content	NO	YES medium	NO	NO	NO	NO

The Shoebox (2010), an embedded media clip plays over its panoramic scene, Bill's Gully, in the central viewing frame below this the Timeline remains inactive and empty

at the academy of Film and Television Studies in Potsdam, who says, "Linear media are becoming part of the content of the world of non-linear entertainment" (167). Ross Gibson (2004) explaining his process with (*LAW)* states;

Most of my work entails finding historical fragments in the aftermath of some cultural "breakage" or violence and then offering narrative or dramatic "backfill" to explain the existence of the evidence. More and more, I am interested in how searchable databases, as well as, linear storytelling, can be used for such imaginative rather than didactic experiences.

For Hayles, (2005) incorporating all the variations available means the definition of narrative needs to be expanded into the concept of "possibility space" which allows for "known knowns, known unknowns, and unknown unknowns to coexist within the same production space" (4-5).

In describing the structural difference between linear and non-linear narrative and demonstrating that the linear is based on *temporal* and the non-linear is based on *spatial* arrangements using examples from documentary makers and digital media artists we can see how these producers have engaged with temporal, horizontal and sequential as well as spatial, vertical and concurrent narratives and how these two seemly opposed techniques, rather than acting as binary opposites are in fact operating in a complimentary way within the same piece.

The non-linear techniques provide the hypertextual nodes and links that permit the spatial domain to be navigated interactively by the user, while the linear sections provide the traditional narrative devices to bring together the fragments into an understandable story.

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Janet Marles

Dr. Janet Elizabeth Marles gained her Ph.D. in interactive digital media, combining the academic fields of Information Technology and Humanities. Her interactive digital documentary "The Shoebox" conflates linear and non-linear narrative in a way that mimics autobiographical memory recall via a technique she calls "memoradic narrative". Janet"s current digital documentary project is an immersive interactive installation exploring Brunei Darussalam"s unique natural and cultural heritage.
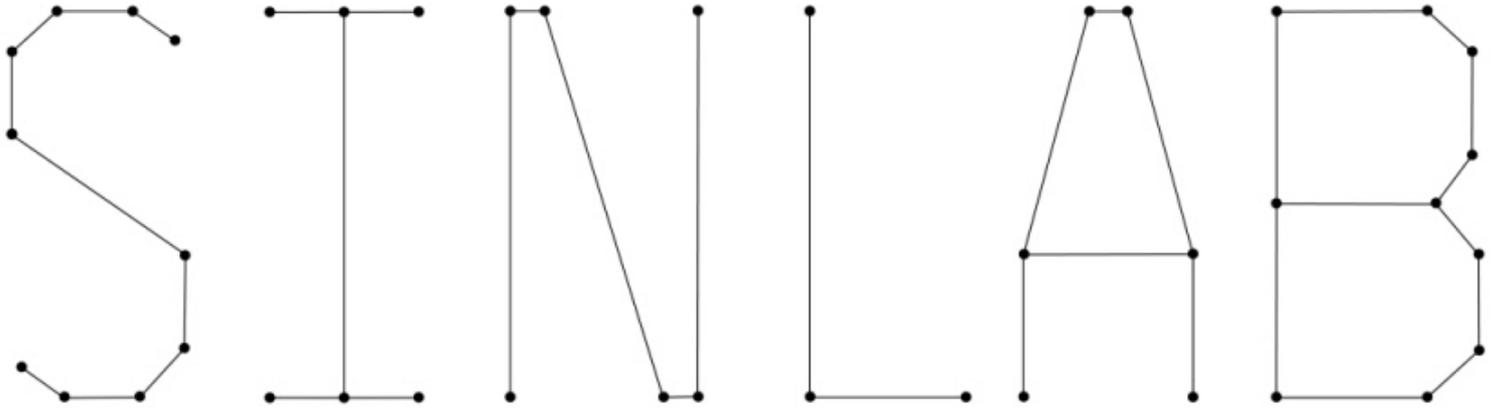
Sinlab Logo

SINLAB
A new Renaissance

by Alessandro Barchiesi

The arbitrary division of domains of knowledge and the request for specialization is a relatively recent phenomenon. During the Renaissance, one of the great eras of exuberant creativity, people did not divide the world into art and science. Instead they saw them as a seamless continuum. Michelangelo was a sculptor, architect, painter, engineer, poet and anatomist; Leonardo was an inventor, painter, engineer, sculptor and anatomist; great naturalists, such as Charles Darwin, made discoveries that we call "science" while trying to understand the beauty and order of the natural world. Our current educational system hardly integrate art and science, failing in an important aspect of generating creativity in people. I personally experienced during my work in the Physics department of the La Sapienza University and during my work as a researcher in Fermilab, P.S.I. and CERN that it's pretty difficult to conciliate a creative professional career (I started first attending fine arts class in the art academy of Rome, then teaching in it during my PhD in Particle Physics) and a professional research position in a scientific field like Physics. The two worlds are disconnected in academia even if a large dose of creativity is required in both.

We need a Hybrid Culture

The common perception of the scientific process is in terms of objectivity, experiments, facts. Scientific articles appear a perfect reflection of real world. While the Arts can be profound, they are always imaginary.

This vision of science as the mediator of everything depends upon one silent assumption: art cycles with fashions, while scientific knowledge proceeds by linear ascent. The history of science is perceived as a simple equation: time + data = understanding. There is the conviction that one day science will solve everything. The deeper we know about reality the deeper we perceive paradoxes. Take, for example, the history of physics. The physicists thought they had the key to understand the universe. Then came Einstein with relativity, altering the classical notions of time and space; then came Heisenberg's uncertainty principle and the beautiful counter intuitive revelations of quantum physics; string theorists started talking about eleven dimensions to reconcile theoretical gaps...

Scientists seek to solve the oldest and most epic of unknowns: what is the universe? Who are we? Before we can understand these mysteries science must go a step further in expanding its possibilities. How can we make this happen? We need to find a place for the artist within the experimental process, to rediscover what Bohr observed when he looked at the cubist paintings seeing electrons not like little planets, but like one of Picasso's deconstructed guitars: superposition of states. The current constraints of science make it clear that the separation between our two cultures is not merely an academic problem, rather a practical problem. If we want answers to the most essential questions/equations we need to bridge our cultural divide. By paying attention to the wisdom of the arts, science can gain the new insights and perspectives that are the seeds of scientific progress. We needed a "third culture", to say it in the words of Snow (1993), which would close the "communications gap". We'll need even a further step: to create a new academic movement that deliberately trespasses on our cultural boundaries and seeks to create relationships between the arts and the sciences.

The point from where we need to move further in building such movement, we can call it a hybrid culture to use the words of J. Lehrer (2012), is that neither culture can exist by itself. Its goal will be to cultivate a positive feedback loop, in which works of art lead to new scientific experiments, which lead to new works of art and so on. Instead of ignoring each other, or competing, or collaborating in superficial ways, science and art will truly impact each other. The old intellectual boundaries will disappear. Art will become a real source of scientific ideas. This will lead us to take an "enlarged" view of truth.

Right now, science is widely considered our unique source of Truth, with a capital "T." Bringing our two cultures together will allow us to judge our knowledge not by its origins, but in terms of its usefulness. What does this novel or experiment or poem teach us about ourselves? How does it help in understanding who we are, or what the universe is made of? What kind of new way of thinking and communicating could quantum mechanics bring when deeply understood? If we are open-minded in our answers to these questions, we will discover that poems and paintings can help advance our experiments and theories. Art can make science better and vice versa.

Until now only single individuals dare to cross the borders of the cultures and it's easy to think to the cornerstones of the performative art world: people like John Cage for the experimental music, Nam June Paik for the video or Merce Cunningham for dance. There is a growing tendency towards a movement that deliberately crosses cultural borders and seeks to create relationships between the arts and the sciences.

SINLAB: towards an alliance between performing arts and science

The natural first step towards the path of the hybrid culture passes through technology. With the emergence of new technologies our culture is undergoing changes – the manner and ways in which we perceive space, how we experience our body, how we communicate, how we produce sense and meaning. History has proved time and again that technological innovation leads to new cultural practices, new ways of communicating, new ways of sense-making, and new ways in which we see and perceive the culture.

Traditionally, one of the prominent cultural sites where the impact of technological invention is

reflected is theatre. As a metaphor and micro-cosm of reality theatre has always made use of technological tools; even the development of new cultural techniques went into the realization and aesthetics of the theatre and of the stage (broadly speaking). With the digital revolution the gap has gradually widened between increasingly complex and specialized technology on the one hand, and artistic practices on the other.

Fig: Choreophony. SINLAB research project 2012 - idea, concept development: Pablo Ventura - interaction design, software, video: Chris Ziegler dance: Unita Gaye Galiluyo, Deborah Hofstetter

Most advancements in the use of technology for theatre that we experience today were initiated by artists, and were primarily cross-applications of technologies originally developed for other fields. Accordingly, these applications have been unique solutions that generally fail to push the boundaries of the techno logical, aesthetic, and cultural envelope. This situation has undermined true experimentation and innovation, and made difficult for the performing arts to explore novel possibilities of expression, and deprived science of a potentially exciting opportunity for experimentation and progress. To overcome this situation, it has become necessary to organize a process that facilitates systematic encounters between theatre artists and scientists, and that encourages scientific and technological research that is in tune with the needs of performing arts. Perhaps the new narratives that will emerge, desperately needed by a society longing for sense and meaning, will empower us and enhance our capability to express ourselves and question our own modernity. This has been the first step towards the construction of the *liason* between the creative world and the scientific one. A new project called SINLAB has been created as a new interdisciplinary research platform: a living laboratory that can be seen as a virtual extension of all participating labs and institutions in one physical location.

Participants in this project include the following schools and universities: École Polytechnique Fédérale de Lausanne (EPFL) and four of its laboratories; the Colour Light Centre (CLC) at the Zurich University of the Arts (ZhdK) and the ZHdK Master scenography program; the HETSR-Haute École de Théâtre de Suisse Romande–La Manufacture, Lausanne; LMU-Ludwig Maximilians-University Munich (D), which bring a worldwide famous expertise. As artistic partner, we are in touch with artists on an international level. The project is funded by the Swiss National Science Foundation (SNF). The objectives of this project are: to fundamentally challenge and renew existing means of expression, and put them at disposition for live experimentation in the theatre; to offer science and technology a new field of experimentation; to foster a critical discourse on the uses of new media in the performing arts, and open up new forms of theatre; to start creating a tradition of cooperation between scientific and arts-oriented universities and gradually build centers of competencies at a national and international level; to sensitize future generations of artists and researchers in education and research, and to create
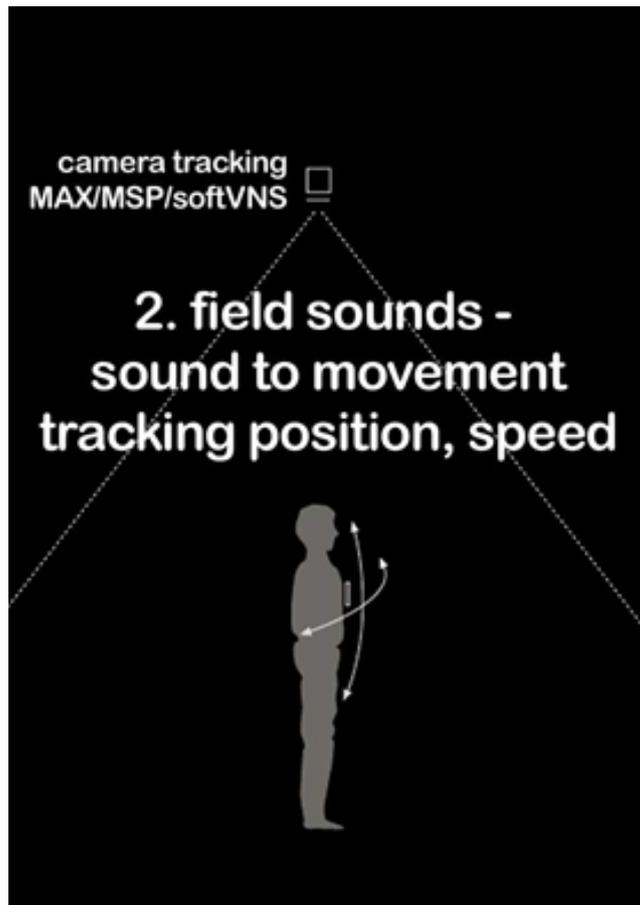
a sustainable process for bringing the universe of science and arts closer together.

It is articulated around three main research areas:

- Transformation of time and space perception and experience within stage-settings,

- Intermediality as a dimension for expression and experimentation on stage,

- Man-machine relations as a field for the exploration of human self-understanding.

Digital performance and the "Entanglement" of Performing Arts and Scientific research are by consequence seen as a particularly fruitful setting for a mutual inspiration.

The starting point for our proposed project is the premise that we understand the theatre stage as a platform for interdisciplinary and trans-disciplinary research, and as a discursive vehicle for art within society. This means that theatre becomes a place and a medium by means of which we reflect the changes taking place in our ways of communicating, our social behavior as well as our living spaces. This is the reason why we are dealing with the development of new technical tools, testing new artistic processes as well as reflecting on the aesthetics and discursive relevance of these developments in a scientific manner. In this project, technology developers, artists, theatre studies experts, dramaturges, cultural scientists as well as representatives of the theatre universities are participating.

The new lab is also intended as a space to initiate the creation of new types of PhDs that are at the same time Scientists and Artists. This is a cornerstone to turn what was only done by individuals into a movement that can dialogue within the academic world, making it possible to really make an impact on the cultural world, and finally bridging the two cultures in a more formalized and durable fashion.Prof. Jeffrey Huang is the main proponent of the project and the director of the SINLAB, dr. Alex Barchiesi, a creative physicist with several years of experience in LHC-CERN experiments, is the LAB head and together with a team of

hybrid PhD of EPFL coming from different artistic and scientific backgrounds constitute the core of SINLAB. The research team is continuously involved in the development and reflection process, frequently supplemented by EPFL-researchers and ZHDK from the collaborating Labs, a senior philosopher from ZHDK, dr. Jens Badura, together with LMU professors and the topic-related selected researchers and artists in residence.

Ok but what's going on in the SINLAB?

The SINLAB was inaugurated on Valentine's Day, 2012. The project will be devoted to PhD students that will be in a loop of thinking, making, sharing also stimulated by the presence of an artist in residence every 6 months. One of the historical figures in Swiss choreography and technology panorama, Pablo Ventura, recently completed his residence, working together with one of the PhDs, Chris Ziegler, on generating a polyphony through choreography: a *Choreophony* as he called it.

This is an element of the *Choreography of Space* he is working on: together with SINLAB he focused mainly on the composition of sound layers by means of dancers' movements captured through motion tracking technologies and mapped to sound files. It is important to understand that this is not an attempt to compose music, but a research based on how dance dynamics and rhythms can affect sounds and on investigating the possibility of music landscapes, texturing the space with sound.

The new and key aspect in this is in the perception of the dancer and of the choreography, which is not to be devised in order to generate specific mapped sounds, but retains its independence and validity as dance composition in itself. The dancer retains the freedom to interpret set choreographies affected by the sounds produced in a loop of feedback and is not transformed in the search for imaginary buttons that would generate a sound composition for a composer. In the meantime, several projects are ongoing, dealing with the creation of experiential environments, immaterial architecture, augmented performative capabilities of expression through commercial technologies.

Sinlab - Project from the first art residency

An open source software framework, SINK has been released as a alpha version few weeks ago by Andrew Sempere, one of the PhD students of SINLAB, to facilitate the usage of kinect sensors technology.

One of the most important art festivals in Lausanne, "Les Urbaines festival" (30 Nov - 2 Dec), will host several works-in-progress of SINLAB. Among them there will be *Quadricone*, a prototype of an interactive suspended structure, reacting to Wi-Fi networks data flow and dynamically transforming itself. *Moody Lights: an interactive experience of emboding the lights* is inserted in the reflection of immaterial architecture by PhD student Selena Savic.

In this context, embodied communication reveals the ways in which people's senses and bodies can be utilized to transfer meanings between one another through technological "augmentation" of the space of means of communication in their environments. Alex Barchiesi, together with the PhD student Andrew Sempere, will create an interactive stage light environment where people's interactions and movements are reflected in the lights of the space, opening new modes of communication for the participants.

It is important to point out that this is all happening under the umbrella of the Swiss National Science Foundation and inside (or with the collaboration of) university institutions, namely EPFL, HETSR, LMU, Tsinghua University, ZHDK.

These institutions will work together to achieve the previously mentioned bridging of the cultures without the need to compromise with production or market constraints. The mixed background of the team will eventually create a playground to move towards a really hybrid culture that aims to move beyond the mere technological level of engagement, and to add a conceptual perspective to favor a new renaissance.

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Alessandro Barchiesi

Head of the Project SINLAB dr. PhD, creative Physicist, studied Particle Physics in Rome La Sapienza University, fellow in Fermi Institute Chicago. PhD in Paul Sherrer Institute (PSI) and La Sapienza University of Rome. Researcher at European Spatial Agency (ESA) and at Italian National Institute for Nuclear Physics (INFN). Researcher at European Organization for Nuclear Research (CERN ATLAS experiment). Lecturer at La Sapienza Rome University. Associate professor of new media art and informatics at Art Academy of Rome; founder of the bLuELab art project. His artistic work has been presented around Europe including IRCAM Centre Pompidou Paris and Auditorium Parco della Musica in Rome and received international awards.

PLACES AND SPACES