

## *Cartography and Mapping Visualizations—A Genealogy of Space: Digitization and Visual Representation of Knowledge as Art*

LAURA GARCIA, MA

**KEYWORDS** *Art and memory, art and technology awareness, genealogy of space, phenomenology, psychogeography, visual displacement*

**DATE** 2012–2013

**URL** <http://cartographies-of-non-place.blogspot.co.uk/>

**ABSTRACT** Since the end of the Cold War *art and technology awareness theory* has emerged in response to concurrently developing forms of new media. This theory responds to digitization as it arises out of analogue systems and the parallel waning of industrial modes of production. Art and technology awareness theory also considers the dominion of public social space in regard to robust forms of electronic surveillance, as well as the technical impact on both landscape and human body. The body can be seen as a central apparatus for knowledge as Maurice Merleau-Ponty makes explicit in *The Phenomenology of Perception*, “...the body expresses total existence, not because it is an external accompaniment to that existence, but because existence realizes itself in the body.”<sup>1</sup> Artists are contributing to the understanding of the relation with the totality of the body against external territories as captured cartographically; they are resolving this dichotomy through expressions and renderings within the context of contemporary art. In this manner knowledge so derived becomes art. In essence, the *ordering of territories* can actually have direct implications on our societies and ways of living as well as ordering the societal structures ethically.

### **TECHNOLOGIES AND ARTISTIC OPPORTUNITY**

The contribution of contemporary art within society has advanced through development of visual imagery under the purview of professional tools. Devices for image science can now be applied to visualizing societal representations. Technologies can order society according to knowledge, expressed through artistic interpretation, embodied in those technologies.

There are sufficient excellent examples of scientists

and artists, such as Buckminster Fuller and Roy Ascott,<sup>2</sup> developing devices for territorial knowledge and researching the common social understandings under a single, self-comparative, world map. Artist Ursula Biemann also maps matters on geopolitics, mineral resources, and material wars. In her work, she depicts the artist as a change-agent who can help solve problems for society using archives, libraries, and databases.

One such example she presents is the history of the Caucasus/Caspian crude oil and gas pipelines that travel through East/Middle East roads. This is a geopolitical artwork that contributes to developing the *aesthetics of spaces*. Considering artworks using mapping, documentary, archives, or databases. These strategies for social observation can be artistically rendered as cartographic, databases, or other mapping formats. These representational systems can be said to include examples from video.art to net.art, and belong to communication and social sciences. Using documents and aesthetics of process, art, and language artworks based upon extensive lists, alphabetical orders, archives, etc., 1970s conceptual art tried to resolve the tensions between *art and memory*. Currently, data visualization is often displayed as the site of documentation and materialization of data knowledge, using software as an interface for communication. In that sense, maps and diagrams are translating data into representational fields, while revealing the incomplete representation of the computational machine.<sup>3</sup>

Cartography as a system of visual representation has been used in exhibitions as a means of displaying ethical and societal problems. This method, sometimes referred to as the *Genealogy of Space*, is part of a categorization initiated by Michel Foucault along with panoptic and heterotopia, that continues with non-site, atopia, dystopia, utopia, Temporal Autonomous Zone and Borders (TAAZ), and structures of power. In Foucault’s model, all physical and non-physical spaces are conceptualized in an embodied/disembodied state and their affect upon the subject in question.

*Psychogeography* is another system of representation—providing potential solutions to the experience of the subject (such as heterocronia, see Foucault) and real time effects that approach spectators through performance and inconclusive kinds of information. Contemporary cinematic examples underscore this, such as Andrei Tarkovsky’s film, *Stalker* (1979). The film explains the meaning of existence through its use of a cave metaphor. The knowledge embodied in the film is dispersed through time and space and leads to an inconclusive, multi-interpretational ending. This can be interpreted

as a kind of visual displacement—from the unique vision (the planet Earth in modern age)—to complex visualization models (as captured through science, as with NASA’s aerospace and satellite imagery). A significant contribution in this field of research is conducted by Fredric Jameson. In his explanation about the cognitive map he offers an answer regarding how subjectivity, translation, multiple meaning, or the codified or hermetic point of view affects visualization of information. In a similar manner, Buckminster Fuller tried to resolve models of representation through his Dymaxion maps. Cartography is commonly recognized because they are often pure, informative renderings that capture (as well) something of humanity. However, they be greatly expanded in communicative expression through interpretive modeling methods. Such interpretive models might be created by *psychogeographers* or conceptual artist.

**EXPRESSIVE CARTOGRAPHY AND VISUAL MAPPING**

Mapping, and its supporting database sources, can be manipulated to support conceptual art. Such renderings do have precedence. Creating art based upon alphabetically ordered lists and archives are a kind of precursor. 1970s conceptual art displayed the relations between art and memory. Database visualizations can become documentation and materialization of knowl-

edge (depending on rendering software and interfaces). In this sense, maps and diagrams are depicting data and recognizing potential incomplete aspects of representational opportunities. As Roy Ascott notes, in the future, the connectivity of computers will set up the total intelligence of humanity. Contrary, media art databases are considered by Alan Turing to be an impossible ideal representation because of random access to information and the searching determinism in browsers. Webstalker by 1/O/D is one of the art alternatives to Google. From Nam June Paik’s *Random Access* (1960) to Josh On’s *They Rule* (2005) databases, nomadic politics, and decentralized poetics encounter in a post-capitalist, de-territorialized space. This space can survive certain real, physical hazards and build the kind of common and ideal global village that Lev Manovich imagined. In this way, data space memory, and the mapping of data visualizations, permit for a disembodied electronic media, where the whole absurd existentialism remains unpredictable and, again, inconclusive. This aesthetic is exploited by Lisa Jevbratt, who conceptualizes territories in databases with the practice of glitch art, or to artist John Klima, with his project, *Earth, 2001*. Klima developed an interactive art data visualization of geo-territorialized spaces within the virtual media.

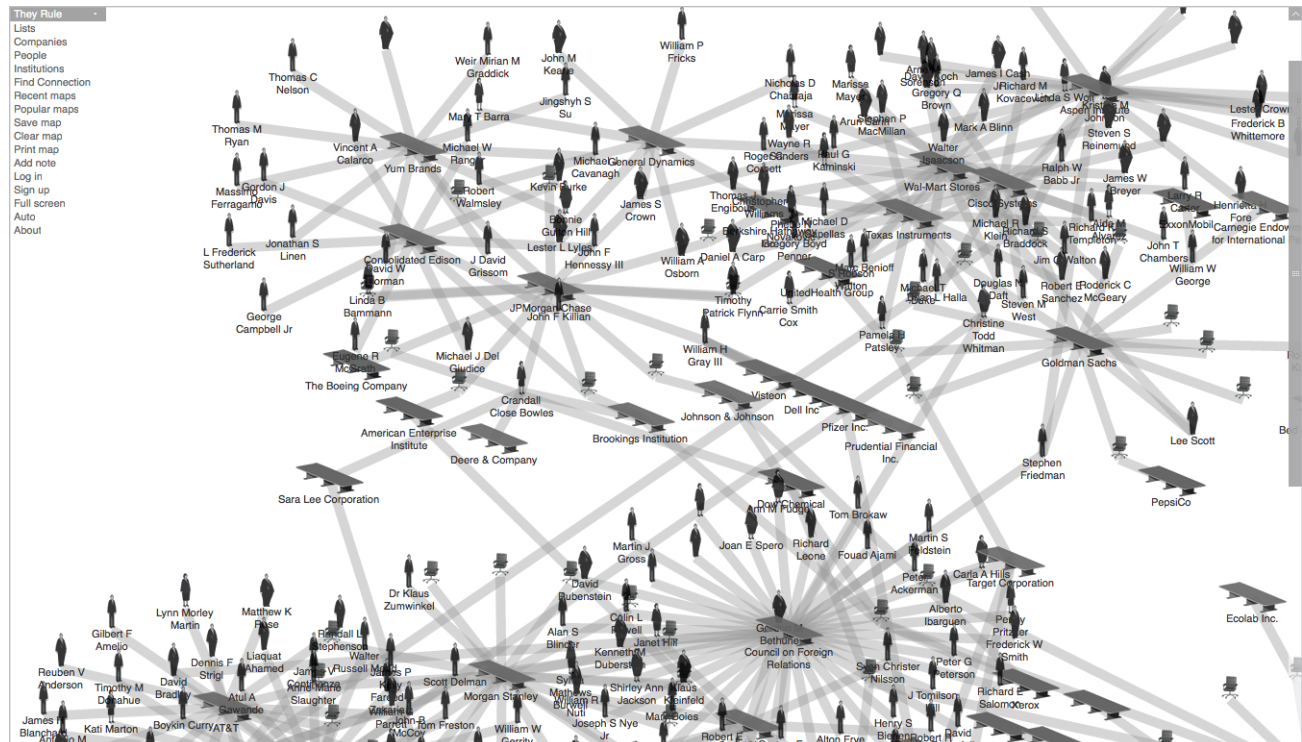


FIGURE 1: Josh On, *They Rule*



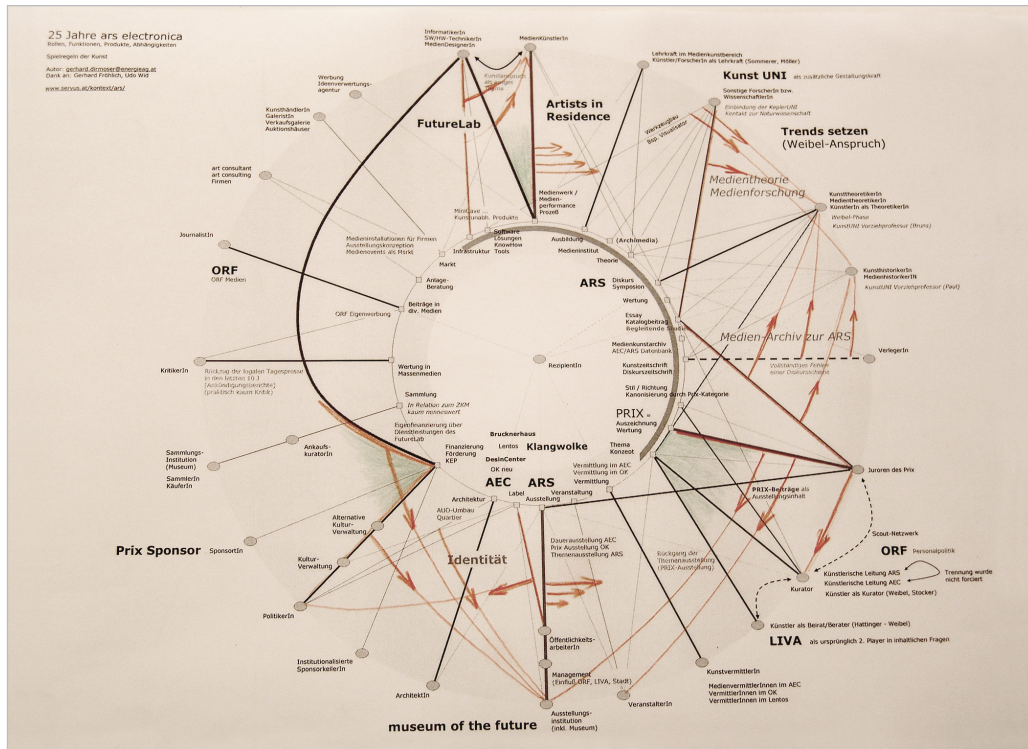
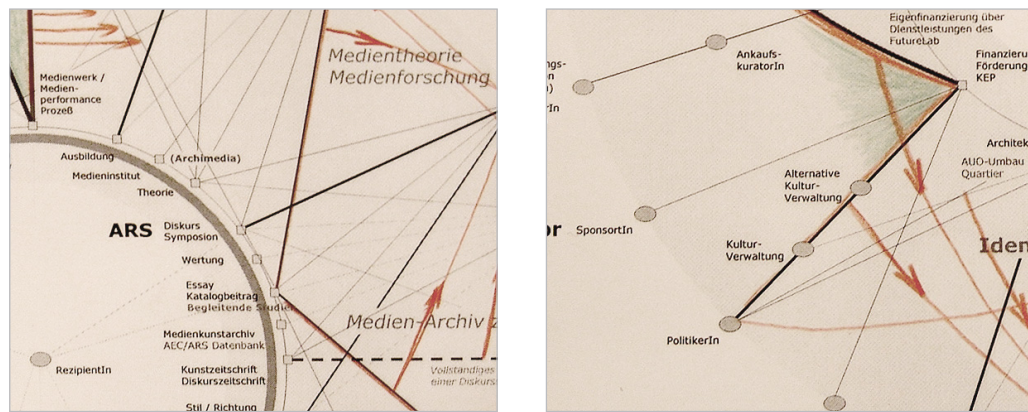


FIGURE 2: Gerhard Dirsomer, *Ars Electronica Database*



Engineers Gerhard Dirsomer and Ben Fry use computational tools to represent information and data. Using the thesaurus as a technical device for databases, Dirsomer works with the diagrams of the database in *Ars Electronica*, as the thesaurus is the common database informatics software used to register and administrate the description of Metadata. However, he does not consider himself as an artist, but as a computer engineer. In his more than 20 years working with the *Ars Electronica* Festival, he has done more than 2,000 works about the festival, representing the performance art and the media artists who participate in the event with digital imagery.

Among his works is the Public Space Server, his own website. He is influenced by the philosophical concept of Rhizome as put forth by Gilles Deleuze and Félix Guattari, the politics of the net, and Voronoi diagrams. His aim is to produce software models to preserve and collect data art. His artworks are linguistically derived from the structuralism of Charles Peirce and the idea of the image-index; the definition of typography and textual configurations: language, and code in Derrida philosophy; Gestalt structuralism; collages, and palimpsest. His work is also influenced by Foucault with the definition of topos/topology as a key to understand con-

temporary thinking of cartography, carts, and cartoteques as a central role in art representation.

Gottfried Leibniz takes the optical psychology based upon geometrical and dimensional shapes, contributing to the development of the image science (holography, photography, camera obscura and volume fractal). Its diagrammatic virtual models for interactive perceptual environments are a translation of the whole complex of the World Wide Web infrastructure, based in Google, Yahoo, Defense Advanced Research Projects Agency (DARPA), and nationwide communications systems. The optical artistic virtual devices based in Mobius strips and CAVE cell models developed by Dirmoser have influences of the communication and phenomenology, the philosophical science that develops representational forms. Directions, vectors, aesthetic synthesis, and dense membranes are a formalist influence for his structural databases. Dirmoser diagrams and maps the archive of the Prix Ars Electronica<sup>4</sup> and draws the system matrix by using clusters and Mercator map models.

Also in use is the Encoded archival description (EAD), a textual encoding initiative (TEI) used in bibliotechnomy, archives, and for documentation. There is also the Metadata encoding transmission standard (METS), the Digital Preservation Coalition (DPC), and the Open Archival Information System (OAIS). All are systems to register data information under specific encoded language to transmit and preserve knowledge from archives, social sciences, or literature. The space data system is a new digital archiving technique keeping standard information under standard use of language. Databases are also used to visualize information in archives (online or physically). The most common database areas are History, Meteorology, Sociology, Population, Politics and Economics. Others are based in the more artistic specific projects of net.art or gender/feminist politics. The policies of archives in museums, such as the one in use by John Ippolito at the Guggenheim Museum, imply not a more objectified creation of art, but of an online practice. The main field in art databases is about the question of preservation. Collectives such as CRUMB (Beryl Gaham, Sara Cook) and curators such as Christine Paul are dealing with taxonomies or mapping for the classification of the history of art and media art history. There are also public strategies based in collections and archives like Rhizome, a specialized digital art database. The categories of preservation according to the policies of ONU, the United Nations Educational, Scientific and Cultural Organization (UNESCO), and ICOM are answering how to deal with public heritage, as well. Databases

are also an editorial and structural model for ordering knowledge. There are different resources in databases, for archival use and editorial management. They follow what Aby Warburg described as “rhizomatic” or diagrammatic models for classification. The policies of art preservation and databases are similar to net.art policies according distribution and production in an anti-objectual fact and convincement. The poetics of code and the modern language after Jacques Derrida’s post-structuralism consider databases as an essential tool in the storage for museology. Since the politics of the internet started in the 1990s when the World Wide Web was built, it positions the criticism and the anti-mainstream-art spirit based in Dada and Surrealism against the ideology of imposed power who determines the transgression of history and the determination of progress. Among the most important databases for useful storage are: the NASA<sup>5</sup> maps and databases for climate, Wikipedia<sup>6</sup>, the database encyclopedia; Archive<sup>7</sup> an amazing storage used by artists and collectives or Archive Maps<sup>8</sup>, a database for London ancient maps and data. There are others such as Gateway to Archives of Media (GAMA)<sup>9</sup>, a group of reunited archives about media art with online access to all European media art archives.



FIGURE 3: Whitney Museum of American Art. Sunrise/Sunset is a series of Internet art projects commissioned by the Whitney

Following the path of institutions and archives for media art, is the Whitney Museum of American Art<sup>10</sup>, which developed a net.art commission and has a new media art storage, the Database of Virtual Art (DVA)<sup>11</sup>; the Critical Glitch Artware<sup>12</sup>, a database for net.art; and runme.org<sup>13</sup>, a software art repository launched in January 2003. It is an open, moderated database where people are welcome to submit projects considered to be interesting examples of software art. Others software

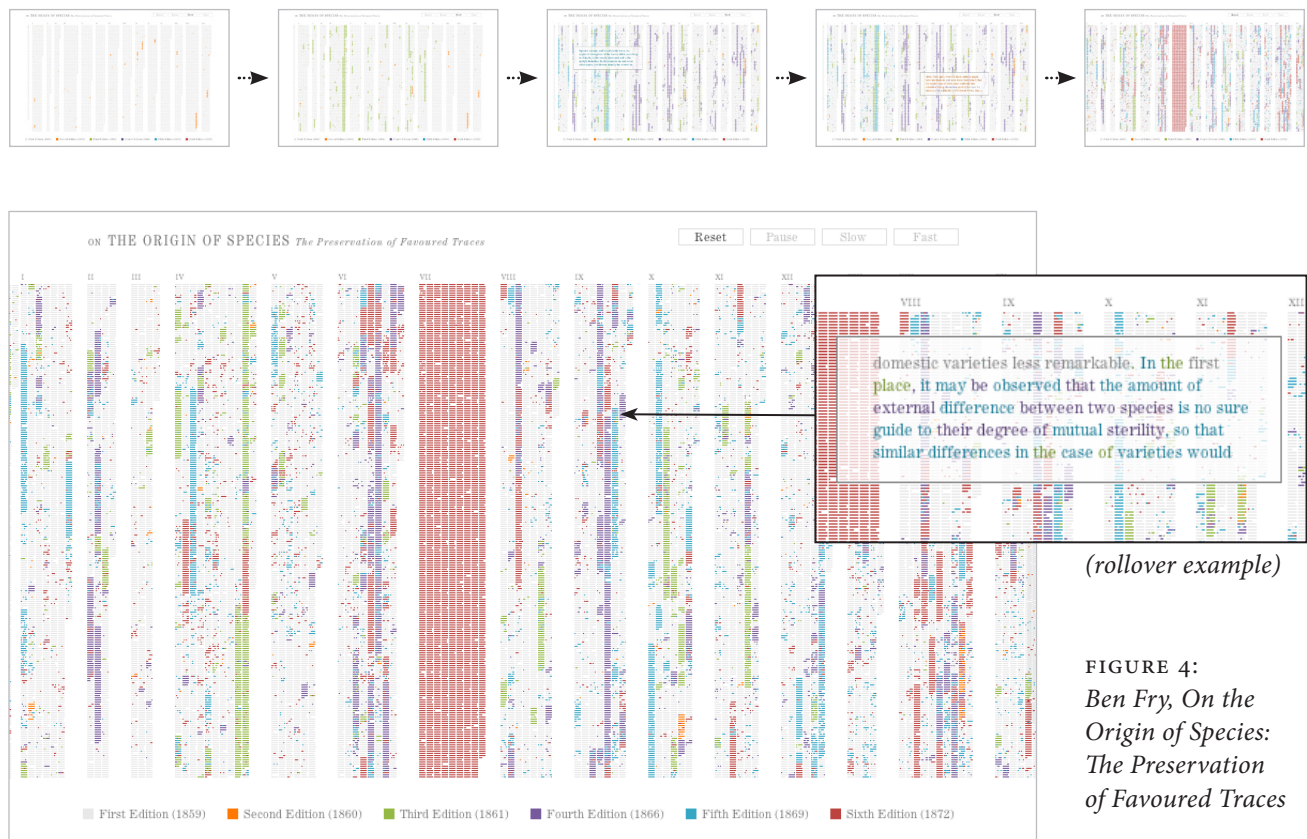


or informational databases and archives are Peer-to-peer (P2P) platforms for downloading and uploading information. Nettime<sup>14</sup> on its face, just a mailing list but is functionally an effort to formulate an international, networked discourse that neither promotes a dominant euphoria (to sell products) nor continues the cynical pessimism, spread by journalists and intellectuals in the “old” media who generalize about “new” media with no clear understanding of the communication aspects of the new internet media. “We have produced, and will continue to produce books, readers, and websites in various languages so an ‘immanent’ net critique will circulate both on and offline” from the net.art online archive of tactical media with manifestos by Fran Ilich, cont3xt, or John Lydon in *The ABC of Tactical Media* by Geert Lovink<sup>15</sup>.

More complete artworks that use the structure of a database are Ben Fry, *On the Origin of Species: The Preservation of Favoured Traces*<sup>16</sup>, a project made possible by the hard work of Dr. John van Wyhe, who runs The Complete Work of Charles Darwin Online.<sup>17</sup> The text for each edition was sourced from their careful transcription of Darwin’s books and Dr. van Wyhe generously granted

permission to use the text. This piece is a simpler version of a larger effort that looks at the changes between editions, and is intended as the first in a series looking at how the book evolved over time. It is a database built with Processing.

Apart from those cited, there are other existing models using net.art archives or net.art database. Gender Art Net<sup>19</sup> is an experimental mapping project exploring the interrelation of gender, ethnicity, race, class, and sexualities in contemporary Europe. Gender Art Net’s primary aim is to link the various existing online resources of feminist and queer artists, projects, and networks thematically. It also provides a platform for artist profiles. By connecting existing, or often remote, online resources, it tries to improve the accessibility and readability of online gender resources while keeping the memory of feminist artistic and cultural production and practices in Europe. By organizing this information in a map, the Gender Art Net works to provide context, connections, and relations between artists, artworks, and networks and between geopolitics and artistic practices. The starting point is a relational understanding of feminism as a critical, multilayered



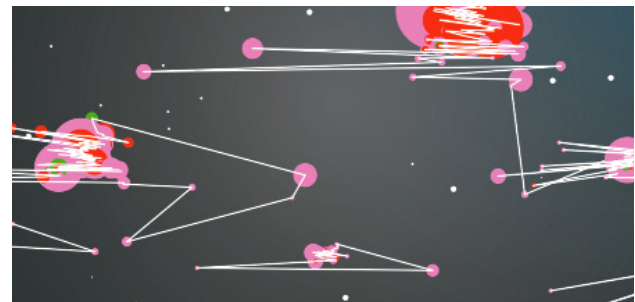
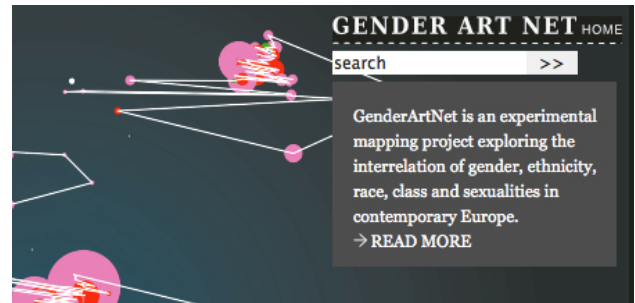
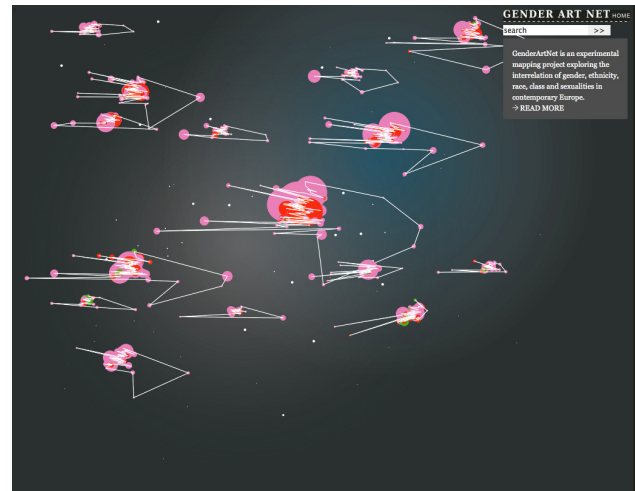
(rollover example)

FIGURE 4:  
*Ben Fry, On the Origin of Species: The Preservation of Favoured Traces*

practice that considers the interrelatedness of various forms of social, political and cultural hierarchies and exclusions along the lines of gender, sexuality, ethnicity, bodily ability, race, class and geopolitical location. In addition to this thematic and relational approach, it stresses the relevance of the geopolitical context for artistic and cultural production and strives to provide a different reading of the geopolitics of Europe through artistic practice. As Irit Rogoff states in *Terra Infirma* (2000)<sup>20</sup>, maps are signifiers of both, location, as well as identity, culture and politics. They are epistemological tools, which encode accumulated knowledge. Historically linked to the emergence of imperial empires and colonialism, they allow naturalizing political systems, borders, regimes, and empires. The contemporary (artistic) practice of un-mapping, re-mapping, and counter-mapping attempts to decode these naturalized systems of knowledge, by assigning unacknowledged histories and marginalized perspectives (such as dislocation, subjective memories, exclusion and cross-cultural experiences) to a geographical terrain. In this sense, re-mapping also becomes a practice of cultural translation.

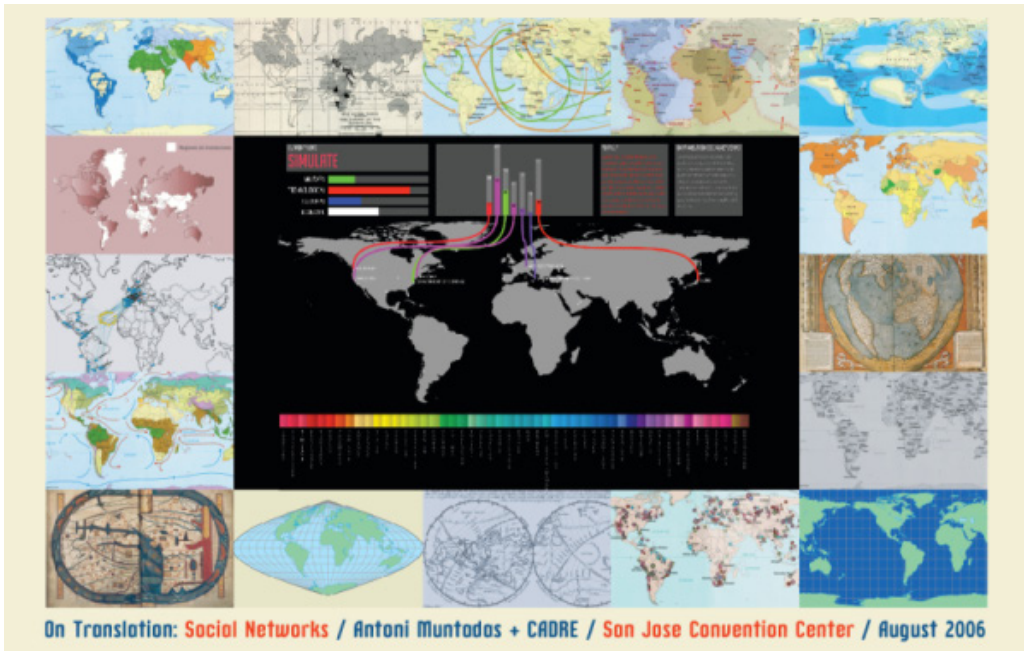
In order to better highlight this complexity, Gender Art Net organizes the map into a series of twelve thematic clusters, called galaxies, which contextualize resources while linking and relating artists, projects, networks, as well as artistic practice, and larger social and political issues to one another. These galaxies have been developed through a longer editorial process in which the participants' personal experiences and subjectivity, their collective inspiration, coincidence, revolt, humor and irony took a strong place. The galaxies are represented on the website using comprehensive geographic information system tools. In order to avoid geographically mapping (new, exotic, other) territories for cultural consumption, it uses the astronomical model as a visual point of reference to map the galaxies as constantly shifting, alternative territories (see FIGURE 5).

There are also different types of software based in artistic open source tools that are using mapping as a display for an interactive visualization of the cyberspace flows. Based in the idea of cybergeography, they are trying to depict the density of the communication networks fluxes, databases and others. Also named and recognized under the categorization of "mapping the net," these examples are using clusters, processing and pure data. Some common examples are *Antidatamining*<sup>21</sup>, Antoni Muntadas, Ethan Miller, or Warren Sacks. Mapping the city is a counter-map ideology based in Fredric Jameson theory. It contributes to criticize the surveillance displaying.



CREDIT: GENDER ART NET

FIGURE 5: Database Visualization.



CREDIT: ANTONI MUNTADAS, ON TRANSLATION SOCIAL NETWORK

FIGURE 6: *Mapping the net.*

Many actions using locative media are recognized as well as tactical media. Soundscapes are examples of deconstructed space, time and sound media. Artists, including Jodi, Stanza, Manu Luksch, as well as media labs around the world, display and research using open source to improve data conditions in public space. These co-existing, yet differing, strategies to map the city are working with surveillance, traffic, weather and pollution, security and health, among others more abstract such as feelings, identity, or memory. Also, data displayed in streams is dealing and confronting publicity vs. information. From Situationist to Psychogeography, the contemporary art devices displayed into the city are strategies that are not used to perceive the city as a decorative stage for massive corporation, but such a place of memory, refusing the commoditization of non-place and the unifying landscape. Since surveillance has turned into merchandise, other tools to socialize in public space are used. Those include strategies for communication, location, weather, or transport to be used by artist and to build the so-called DataCities. George Orwell's Big Brother control and securitizing system is now a kind of reality. Landscape implies an understanding of melancholic aesthetics where the ethos of subject turns into a participatory agent in history who reading the memory of landscape turns it into the poetics of the space, field of artists.

#### BIOGRAPHY

*Laura Plana Gracia:* Actually Assistant Lecturer, Sound Interaction and Automation, at Rose Bruford College, London. BA History of Art UB University of Barcelona, 2006. MA Curating New Media Art MECAD 2007. Curating, Communication and Criticism, Central Saint Martins, University of Arts London 2009. MA Media Art Histories Vienna 2010. PhD Visual Global Cultures forthcoming. Has exhibited: Field Experimental Generative Animation London 2009; Arco Cinema Madrid 2010; Crisp London Los Angeles 2010. Sound.Art Event, London 2012. Has been at ISEA; Conference Dortmund Germany 2010. Is curator invited by MOTA Museum of Transitory Art New Media Art, Belgrade, Serbia 2011. Has been awarded by MACBA as Researcher in Residence at Centre d'Estudis Barcelona.

**NOTES**

- 1** Maurice Merleau-Ponty, *Phenomenology of Perception* (London: Routledge, 2002) 192.
- 2** Roy Ascott, *Telematic Embrace: Visionary Theories of Art, Technology, and Consciousness*. (Berkeley: University of California Press, 2003).
- 3** Thomas Dreher, "Art & Language & Hypertext: Blurring, Mapping and Browsing" IASLonline NetArt: Theorie, <http://www.iasl.uni-muenchen.de/links/NAAL.html>
- 4** Servus, "Index of /context/ARS," <http://www.servus.at/kontext/ARS/>
- 5** NASA, <http://www.giss.nasa.gov/>
- 6** <http://www.wikipedia.org/>
- 7** <http://www.archive.org/>
- 8** MAPCO, "London and Environs Maps and Views," <http://archivemaps.com/mapco/london.htm>
- 9** Gateway to Archives of Media Art, <http://www.gama-gateway.eu/>
- 10** <http://whitney.org/Exhibitions/Artport>
- 11** <http://www.virtualart.at/>
- 12** <http://criticalartware.net/winners/>
- 13** <http://runme.org/>
- 14** <http://www.nettime.org/>
- 15** Geert Lovink "The ABC of Tactical Media," <http://www.nettime.org/Lists-Archives/nettime-l-9705/msg00096.html>
- 16** <http://benfry.com/traces/>
- 17** <http://darwin-online.org.uk/>
- 18** <http://processing.org/>

- 19** Gender art net <http://www.genderartnet.eu/emerger/>
- 20** Irit Rogoff, *Terra Infirma: Geography's Visual Culture* (Abingdon, England: Routledge, 2002),
- 21** Antidatamining <http://rybn.free.fr/ANTI/INDEXFRAME.html>