Marking Space: on Spatial Representation in Contemporary Visual Culture

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Introduction

The following paper looks at different ways that space is being dealt with in contemporary visual culture, and attempts to link these evolving modes of spatial representation to emerging technologies, particularly GPS, GIS, and openGL, as well as to suggest links between the depiction and thinking about space in the current moment with similar or related explorations from the history of late-twentieth century avant-garde artistic practice.

While this paper is necessarily more suggestive than exhaustive, I've made an attempt to choose contemporary visual practices and practitioners that I felt could stand as representatives for larger tendencies in their respective domains. This paper originated as a somewhat personal document, an attempt to situate my recent art practice within a larger historical and cultural context. As such, at times the links between these divergent practices must be made through the sensibility of the author.

Historical, Theoretical, and Contextual Context

Lev Manovich writes in *The Language of New Media* on "spatial montage" as a mostly overlooked cinematic mode, in which time is flattened and narrative is presented through the presentation of multiple images at once, where the space of the screen is "cut'" and "spliced" to favor simultaneous action unfolding in space over linear action unfolding over time.[1]

Manovich's examples of spatial montage range from the first use of a split-screen effect in the cinema of the 1920s through the "expanded cinema" of the 1960s exemplified by the work of Stan Van der Beek, to the web-based interactive piece "My boyfriend came back from the war!" by Olga Lialina. While he includes a mention of the dual-screen interface in the Goldeneye video game, in which the player can view the action of the game from two perspectives at once, Manovich limits his formulation of the spatial montage to motion pictures shown on multiple screens simultaneously, stopping short of a structural exploration of the virtual space of 3D video game environments.[2]

It may be well worth thinking about another sort of simultaneity present in these virtual worlds, a simultaneity that springs from the fact that the entire space of the game is present from the beginning to the end, laying in wait for the player to discover it, for the processor to render it, to make it visible. In contrast to Manovich's formulation of spatial montage as various motion picture sequences viewed concurrently, this is a cinema of space that functions through limiting the player's view of an always already complete universe. Since the player can only see what is in direct proximity and can only effect what can be seen, be it an obstacle to be navigated or an enemy to be destroyed, the narrative of the game is directly linked to the player's location within and movement through the space of the game. The construction of the game's experience is as much an act of architecture as of storytelling, as different elements of the story are mapped to specific sites within the game's environment, and the timing of events is contingent on the avatar's movement through this virtual space.

In 2003, London-based Sony subsidiary SCEE Team Soho released The Getaway, a game for the Sony Playstation 2 console. The game's very linear story directs the player through the various missions of a gangster/crime drama, first from the perspective of a just-out-of-the-joint gangster, then as a detective following in his wake. The game's aspirations toward an interactive, spatialized cinema are clearly evident in its use of in-game indicators and, most spectacularly, in its setting within a detailed model of London.

Team Soho eschewed the standard practice of using health meters, time counters, and maps to tell players how they are doing in the game. Instead they made the avatar's health apparent in his behaviour (limping, bleeding, etc.) and used vehicles' turning signals as indicators to help a player navigate the game's terrain. The Getaway contains a detailed model of 40 square kilometers of central London, which Team Soho painstakingly constructed, using some 30,000 digital photographs as visual references, at a development cost in excess of 5 million British pounds.[3]

The ability to drive recklessly through a familiar (to some) landscape was frequently lauded in reviews as one of the game's main attractions, and upon beating the game the player is rewarded with the ability to simply explore the modeled city without a clear objective.

While The Getaway strives to mimic the appearance of a traditional film, it remains, of course, a video game and as such has a structure vastly different from that of a film. While a film consists of a series of discreet photographs (or, in the case of much contemporary cinema, highly composited images), a video game such as The Getaway exists as a collection of diverse components (e.g., mathematical models of environments and characters, programmatic objects and functions, bit-mapped images, rendering instructions, a "camera" matrix, a timer, etc.) that are mutually dependent and responsive to one another and to user input. The components that make up such a game space are, of course, ultimately reducible to initial data, instructions for processing that data, and instructions for displaying the result of these calculations. The image that fills the frame each time the screen is refreshed is determined by and reflective of the specific state of these components at that exact moment.

Because The Getaway, in following the norm for commercial 3D video games, so aspires to cinematic photorealism, it is easy to for get that its illusionistic perspective is but one mode of visualizing the complex spatial model and the processes that make up the game, chosen from amongst infinite other possibilities.

GPS[4] is an interesting technology because it popularizes the ability to take highly accurate recordings of one's location, and because it understands terrestrial location in terms of four data-points; longitude, latitude, elevation, and time. This enables us to understand our world as a vast collection of potential locations, each discreet and specific, within a spherical four-dimensional matrix. The method of the GPS-equipped cartographer becomes one of data acquisition and visualization, as location takes on an objective quality in addition to its relative and experiential qualities.

The accessibility of a means to generate accurate locational data provided by GPS has proven very attractive to artists, and a long-standing interest in the exploration of spaces and mapping within the artistic community has recently been revitalized under the banner of "locative media". This new-media neologism includes the work of artists and theorists concerned with theories of space and place, locational identity, urban planning theory, and location-aware devices and technologies (mainly mobile computers and telephones equipped with GPS, and GIS).[5]

Many locative-media projects use the GPS system to generate or call attention to patterns of behavior and meaning that might otherwise remain invisible. This reliance on and exploitation of a pre-existing system (GPS) for the generation and/or revelation of meaningful new forms can easily be read as an affinity of strategy between contemporary locative-media works and conceptual art of the 1970s, the Situationist *dérive*, mail art, early web art, and contemporary interventionist and tactical media strategies. Of these, I believe the Situationists, particularly with their development of psychogeography, are the most directly influential on contemporary locative media.

The Situationists International[6] developed the notion of psychogeography as a field of inquiry into the operation of urban environments and architecture on the human psyche and the ways in which a city influences its inhabitants' behavior. Psychogeography was conceived of as one strategy for the development of a "unitary urbanism," a utopian ideal of the city as an environment for the free play of its inhabitants, who were supposed to be past the necessity to work by the new automated manufacturing capabilities of the 20th century, and whose chief activity would be to playfully adjust their built environment to suit their desires.[7]

The main method for the generation of psychogeographic data was the *Dérive*.

> One of the basic situationist practices is the Dérive [literally: "drifting"] a technique of rapid passage through varied ambiences. Dérives involve playful-constructive behavior and awareness of psycho-geographical effects, and are thus quite different from the classic notions of journey or stroll.[8]

Basically, this was a process of wandering as aimlessly as possible through the cityscape and taking note of areas of attraction and repulsion, preferably in groups so as to take measurements that would be more accurate for relying less on an individual subjectivity. The actual form of the psychogeographical data varied in form from written descriptions to expressive maps and collections of ephemera gathered during the *Dérive*.

One artist working with locative media in particularly evocative ways is Masaki Fujihata. Fujihata's series of Field-Works involve him walking along very intentionally chosen paths and collecting GPS data, video images, and sound recordings on his travels. He later creates three-dimensional maps of his travels from the GPS data and plots images according to the point at which they were recorded, using data from an electronic compass to place the photos at the correct angle within his map.

In contrast to the Situationist methodology regarding the Derive, Fujihata is very intentional about the path that he travels and leans on these decisions to supply some of the meaning in his work. For instance, in *Field-Work@Alsace,* 2002, Fujihata travels along the border between Germany and France. In *Field-Work@Geneva,* he invited several professional interpreters who had emigrated to Geneva, Switzerland, to walk with him, each in turn, from their apartment to a place of their choosing, where they would feel "at home," and Fujihata interviewed them during their walks, creating a commentary on locational identity on multiple scales (the international to the national to the local and personal).[9]

Figure 1

In Fujihata's three-dimensional trace-route maps, the presence of the precisely plotted and oriented photographs makes the white trace-route lines suggestive of the infinite number of undocumented spaces, moments, and perspectives of his performance. Where the photographs were shot near one another, a ruptured continuity forms between the frames, and from the collection of images a landscape begins to form, lifted neatly from the specific time(s) and place(s) of the performance to be reconstituted in a digital space. This again brings to mind the notion of the spatial montage, as the images are juxtaposed according to the places they were taken, and together form a virtual space that is both suggestive and reflective of the real space, time, and performative travel that it serves to document.

GPS technology, as a product of the military-industrial complex, is, of course, inextricably bound to the concerns of the dominant forces within our increasingly globalized, late-capitalist world. As Western corporate capitalism expanded in the late 20th century, opening markets around the world (often forcefully and enlisting the aid of national militaries), it has become increasingly advantageous to have

access to immediate and accurate locational data on a global scale. GPS can be viewed as a product and a tool of the growing need of corporate and military powers to accurately map spaces and track locations, for reasons more or less sinister.

Julie Mehretu is a painter whose work deals with themes of geography and mapping, globalization, and the frantic kineticism of contemporary urban life. Her paintings layer architectural forms taken from blueprints and plan views with sweeping lines and symbols that are evocative of weather charts and cartographical markings. Mehretu's paintings are built up in layers of drawn and painted marks between layers of a translucent acrylic-and-silica mixture, beginning with architectural forms, and then with groups of gestures that she calls "characters" and which she uses to create narrative flows both large and small.[10] The layers in her paintings seem to function as multiple levels of figure and ground, extruded (exploded?) out into a 3D space, and also to demarcate the passing of intervals in time, with her characters moving, reproducing, connecting, expanding, with each progressive layer.

This technique allows for a flattening of time into an onion-skinned simultaneity, wherein the abstract narratives unfold, extrude, and explode through space, and characters are extrapolated into volumes. This recalls the notion of the spatial montage, like an open-exposure photograph read as a motion picture, where volume becomes movement. The logic of the cut is here replaced by that of the long exposure, as if the frames, rather than advancing in series, chose to stay put, to pile upon one another, upon the screen or canvas.

Figure 2

In interviewing Mehretu, Olukemi Ilesanmi suggests a relationship between her work and the work of the Situationist International, a correlation that she acknowledges thusly:

> I am totally behind the idea that a fully realized, creative, individual impulse can rock the boat. Especially right now, at this point in the super rapid evolution of a geopolitical global situation consumed by and with American Capitalism. I am inspired by and interested in the subversive, anti-establishment impulse of the various Situationist projects as well as others that share this impulse: Constant's New Babylon, David Hammons, punk rock, gangster rap. I am also interested in the potential of "psychogeographies," which suggest that within an invisible and invented creative space, the individual can tap a resource of self-determination and resistance. It is especially potent in a self-propelling and self-consuming context completely colonized by standardization. This impulse is a major generating force in my drawing and my larger conceptual project as a painter.[11]

Analysis and Synthesis

While I've been interested in the intersection between the body and technology for some time, in my work and in my thinking, moving from rural Iowa to New York City has absolutely heightened my awareness of the relationship between my body and the space it occupies, and I believe that this new awareness is primarily responsible for the direction of my recent work. The combination of the preciousness of personal space with the thoroughly considered, entirely constructed nature of the "landscape" and the density of meaningful, interpretable spaces found in an urban environment led me to think about the relationship between the human body and the built environment, and to consider more thoroughly digital technologies concerned with spaces real and virtual.

Still preoccupied by interface between the "real," or physical world and virtual spaces, it seemed natural to think about GPS technology as a system for sampling the physical environment as a series of data points, which could then be subjected to a nearly infinite number of processes, the most obvious being the visual modeling of the original space. This process of transforming actual space and time into a mathematical model is what led me to *24hours Walking Manhattan*; I was interested in exploring all that was stripped away by this process: the specificity, the liveliness, the irreducible physical, bodily realities.

Of course, I couldn't think about virtual spaces without considering 3D gaming environments, undoubtedly the most pervasive and popular type of virtual spaces around. It is interesting to think about other possible models for the visualization of space and for the relationship between data input and visualization. The more I've thought about the "back end" of 3D gaming environments, the more I've come to understand them as data input, processing, and visualization loops (following the input-processing-output model nearly universal to computing), and the more I am compelled to explore alternate forms of spatial data visualization in my own work.

Conclusion

In conducting this research, I've come to a much more thorough understanding of my position within the field of digital art and contemporary art generally. While I feel that I've come to understand my working context much more acutely through this research and feel that I am much more able now to define my own "project," in the largest since of that word, I also came to recognize room for development in my chosen field.

In working with GPS technology, a technology which is hardly unique amongst those being actively explored within the new-media community for its having been developed by the defense industry, I've come to feel that the exploration of technology by artists must develop as a space resistant to and critical of the socio-political order from which these technologies were born, lest the artists themselves become complicit with the agendas of the military-industrial complex. I recognize that this is not a novel sentiment, and that there are many people doing good work in this direction, in an increasingly

adverse political climate. Still, I feel that it is worth stressing the importance, in this time of illegal and unjustifiable imperialistic warmongering and rapidly diminishing civil liberties, to, as a media artist, take a well-considered position within the social sphere and in relation to the technologies through which social and political relations are constructed and enforced.

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Endnotes

[1] (Manovich, 2001, p. 237)

[2] (Manovich, 2001, p.237)

[3] (Williams, 2003)

[4] NAVSTAR GPS (Navigation Signal Timing and Ranging Global Positioning System), commonly known as GPS, is a satellite navigation system developed by the United States Department of Defense. Development of GPS began in 1967 and reached its current state in 1989. It has since become available for limited and selective civilian use, with the military reserving its more accurate dual-frequency mode and reserving the capability to selectively shut down civilian access within war zones or in times of global alert. Military applications of this technology range from cartography to precisely synchronized timing and missile guidance, while civilian applications include orienteering, trip planning and vehicle tracking, guidance for the vision impaired, collaborative games, aeronautic navigation, and location-aware advertising.
GPS receivers work by calculating the distance between the receiver and four of the 24 GPS satellites in orbit around Earth to determine the precise location of the receiver in three dimensions. In this way, it determines not only the present position of the receiver in relation to another receiver, or to that receiver's previous position, but its proximal relation to every other possible position, its exact location within a four-dimensional matrix of precisely quantifiable possibilities. For a more complete description of the mathematics involved in this calculation, please visit: en.wikipedia.org/wiki/GPS.
The receiver is capable of determining its precise latitude, longitude altitude, the precise time of the reading, and the accuracy of its calculations. The position of a GPS receiver is determinable to an accuracy of 10cm (4 inches). GPS receivers can then use these data to calculate the velocity and direction and movement of the receiver as they change over time.

[5] (Locative Media, 2006)

[6] The Situationist International was an avant-garde organization of artists/ writers founded by Guy Debord, who, in addition to organizing shows, producing films, and engaging in lively (and often divisive) political and theoretical debate, published the journal International Situationiste. For more on the Situationist International, please see Simon Ford's The Situationist International: A User's Guide (2005, Black Dog Publishing, London) and Sadie Plant's excellent The Most Radical Gesture: The Situationist International in a Postmodern Age(1992, Routledge, London and New York)."

[7] Unitary Urbanism found its most lucid expression in artist and situationist Constant Nieuwenheuys' New Babylon project, which he worked on from 1956 to 1974. New Babylon, which originally bore the working title Dériville, was conceived of as "a series of environments and buildings designed to be infinitely re-arrangeable" by their (post-revolutionary, liberated) inhabitants (Ford, 2005, 74). The idea was to create a de-centered urban environment that, through its constant adjustment and adaptation, would free people from social control and class stratification common to static cities.

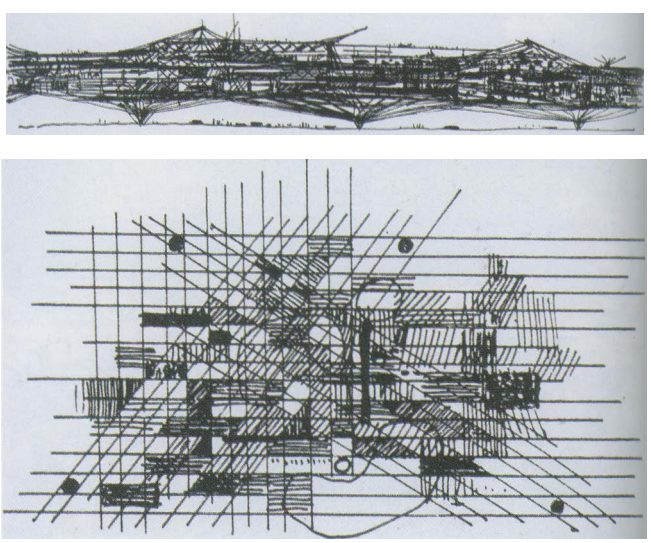

Figure 3

Constant, Illustrations from International Situationiste, no.3, 1959.

[8] (Debord, 1958)

[9] (Fujihata, 2005)

[10] Fogle & Ilesanmi, 2003, 13

[11] Fogle & Ilesanmi, 2003, 14