

## LA INTERCHANGE: A REAL-TIME MEMORIAL

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### Abstract

LA Interchange is a site-specific public art project that proposes a real-time memorial at the intersection of downtown Los Angeles freeways. Set in a renewed urban park at the intersection of the Harbor (110) and Santa Monica (10) freeways in the heart of downtown Los Angeles, the LA Interchange memorial takes the form of an illuminated water fountain that uses real-time accident data from the California Highway Patrol Incident Report website (<http://cad.chp.ca.gov/>) to affect the intensity of the fountain's stream and colored light, thereby creating an immersive atmosphere revealing unseen data in a useful, yet disturbing manner.

The more interesting and at the end maybe more important challenge is how to represent the personal subjective experience of a person living in a data society.

—Lev Manovich [1]

### Urban Renewal / Accident Ambient Display

Imagine a serene park landscaped with native plants following walkways lined with sitting areas, all surrounding a large water fountain emitting a cool mist. You

are in downtown Los Angeles on a warm summer evening in the middle of a freeway interchange with cars zooming around you 50 yards away. You feel disoriented by the neighboring traffic, yet strangely protected within the bucolic park. You take a seat, smiling while fellow visitors enjoy the setting, some even wading into the fountain's pond. Looking up at the fountain, you notice its height has just changed, the stream illuminated dramatically in a show of glowing and reflected light not unlike a Las Vegas water show. Beyond the water, a large digital LCD panel displays accident information. You wonder if the fountain and the information are connected. The fountain changes height again, higher this time and illuminated blue. As the digital display information changes, you notice what appears to be an accident description: Possible Fatality — Ambulance Responding.

The LA Interchange real-time memorial fountain is an interactive display system that enables an immersive experience by creating an enjoyable atmosphere complemented by meaningful data visualization. The interplay between the fountain as a stream of water and its meaning as a stream of data develops a tension between the physical surroundings and the unseen data that is affecting the fountain behavior. Park visitors are immersed in the calming pastoral attrac-

tion of the water fountain and park atmosphere, and then stirred by the meaning of the fountain behavior. Motorists involved in automobile accidents become unwitting participants in the overall immersive experience as the representation of their misfortune becomes data that affects the fountain behavior.

By visualizing the accident information, the fountain is an ambient display that shows data activity in the background for users of the data (Wisneski, Ishi, et al.) [2]. In this case, the users are pedestrian visitors to the park and motorists in the vicinity who become aware of accidents happening in the state of California. Part of the usefulness of an ambient display is that it shows data in real-time to aid the viewer and to affect behavior. In this case, fellow drivers become aware of the severity and frequency of accidents and are perhaps encouraged to drive safely. By revealing the unseen data in a pleasing manner within enjoyable surroundings, yet pointing to the ultimate nature of the highway fatality, the real-time memorial evokes an immersive sublime experience.

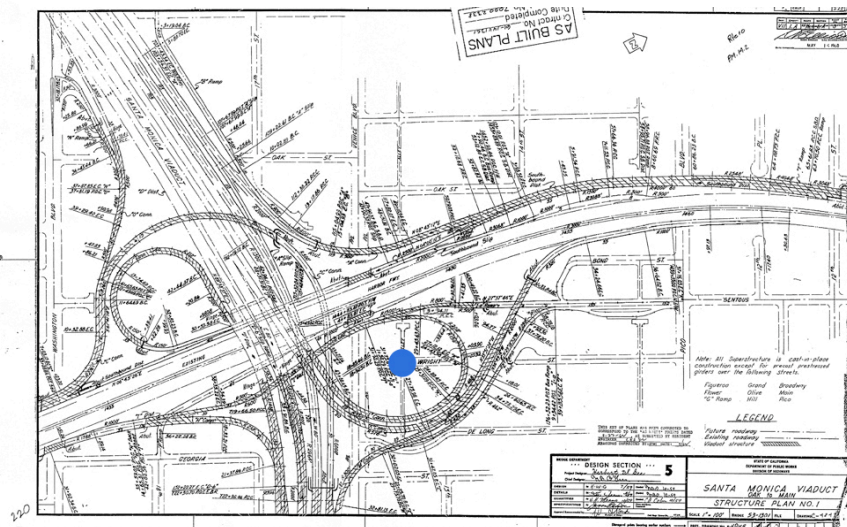
Typically, when an accident occurs on a highway in the state of California, the California Highway Patrol responds and records the incident on the CHP website as follows:

3/20/2009 - 10:36 PM  
Traffic Collision - Ambulance  
Responding  
WB I10 AT S BUNDRY DR  
West Los Angeles

This type of real-time information would be used in the public setting of the park to create a visual image of the severity of the accident that can also be viewed by drivers in the downtown vicinity. Pedestrian visitors and local drivers would be able to see the digital readout whereas drivers farther away would only see the illuminated fountain.

All types of accidents that appear on the CHP website have been rated on a severity scale of one to five. The LA Interchange database therefore includes the CHP data with the appended severity rating. A minor accident such as "debris on roadway" has been rated as a severity 1, a "traffic collision—ambulance re-

Fig. 1. Proposed site in downtown Los Angeles, plan courtesy CalTrans Los Angeles.



LA Interchange  
memorial and parkland

sponding” is rated as severity 4, and the rating of severity 5 signifies a possible fatality. The fountain then will react to this data such that a higher rating will result in a higher fountain geyser, and a severity 5 rating will trigger blue lighting and peak intensity of the water fountain, thus evoking a sublime moment of reflection for the spectators, or “users” of the information.

### **Proposed Site: Nobody Walks in LA**

The reason for choosing Los Angeles is its obvious centrality as the hub of car culture in California, if not the world. Hollywood’s penchant for spectacle could actually facilitate a realization of the project there.

The proposed site of LA Interchange, the northeast loop of the intersection of the Harbor and Santa Monica freeways in downtown Los Angeles is currently home to apartment buildings, small businesses and a recycling center with many homeless and destitute visitors. It is an overrun community where urban planners are sorely needed. Serendipitously, the southwest loop of the interchange contains a CHP headquarters that I discovered while walking around the area doing research photography. Most people drive by this area en route and so never realize what is there. The proposed real-time memorial park would change this, beckoning commuters to notice not only the place, but also the significance of the moment and its relation to the wider environment.

Once the decision was made to situate the work in Los Angeles, I did research using the Google Earth 3D mapping navigation tool. From above, the shape of the intersection stands out as an elegant figure 8, which symbolizes infinity in mathematics, and in some cultures everlasting life [3]. Intersecting downtown—the Santa Monica freeway is the main east-west artery, the Pasadena/Harbor the main north-south artery—the highways literally and figuratively create a crossroads. The fountain can be viewed as the pulsing heart of the transportation system—the fountain as nexus pulsing with the lifeblood of what literally makes us move as a technologically advanced society.

### **Prototype System**

The LA Interchange model consists of software and hardware components. Central to its functioning is its database of highway accidents collected by scrap-

ing the CHP website every minute with a Perl script and parsing the data into batches every 5 minutes using PHP. The data batches are accessed by a Propeller microcontroller, which then adjusts the pump and LEDs. All accidents on the CHP website are rated by the artist on a severity scale of 1 to 5. Severity 1-4 causes the outer ring of white LEDs to light up. Severity 5 causes the inner ring of blue LEDs to light up. Simultaneously, the pump sets the water fountain to varying heights (5 levels) through a series of potentiometers that calibrate the stages of the voltage regulator depending on the severity value stored in the database. The fountain is updated every 30 seconds. A digital LCD display, located next to the fountain just outside the loop, shows the current accident information: time, date, incident type, severity, location and area.

The tabletop model is 8’ long x 4’ wide x 3’ tall (approx. with pump and water receptacle). It is constructed of wire and plaster coated with an epoxy resin. Currently the wiring, pump, electronics and water receptacle are housed in a wood-constructed base, although this could be rebuilt in a number of ways for exhibition.

### **A Real-time Memorial / A Sublime Monument**

LA Interchange is a memorial and a warning similar to ad hoc roadside memorials that not only memorialize loved ones at the place of their death, but also warn fellow travelers of the danger. In this way, the roadside memorial is a humanitarian gesture, providing a platform for empathetic remembrance of persons dying, while advising of a safer future.

What is the meaning of a real-time memorial? The real-time memorial enables a communal experience between the victim/subject and the spectator. It enables the communal reflection on the catastrophe of the moment, but also that life goes on: another event immediately takes place thereby eclipsing the previous moment. The endless event cycles refocus attention on life as a continuum thereby underpinning the preciousness of life; or, on the other hand, the constant feeding of data implies the constancy of the machine.

By shifting events every 30 seconds, the immensity of the system becomes apparent. Watching a severity 5 event (a fatality) conjures a sublime moment in Kantian terms as the boundless awe of the fountain couples with the terror of

the event to arouse feelings of enjoyment coupled with horror (Kant) [4].

In terms of LA Interchange, as the illuminated blue fountain spews forth a column of water on the occasion of a highway death, the observer is initially struck by the beauty of the display that then provokes horror. From the casual position of the tourist who is removed from such dangers, the beholder revels in the astounding yet simple sight of a fountain that could be signifying, “someone has died.”

I have been asked why I do not illuminate the fountain with the color red to signify death. Aside from my desire to escape the obvious cliché, the color blue is chosen to depict the sublime transformation or transubstantiation. The memorial eulogizes the passing of the accident victim, the transferring of a life from this plane to another, represented by the transubstantiation of water passing into air.

### **The visitor experience**

The memorial has two modes of viewing. The first is the park and fountain where beholders can enjoy the landscape of the renewed area and the water that is changing height every 30 seconds, and see the accident information displayed on a LCD display. The second is while driving around the vicinity of downtown Los Angeles, as the fountain geyser will shoot above the freeway during high severity accidents. At night, a fatality will be especially dramatic, with the blue illuminating the surrounding park and roadways.

During an exhibition of an early software model of the work, visitors experienced a morbid desire to see a severity 5 event; a longing akin to “rubberneckers” who cannot turn away from the scene of an accident. Complex emotions are generated as we seem compelled to gaze upon the misfortune of others while simultaneously feeling expressions of guilt for wanting to see this horrible spectacle.

### **Aesthetics: database + death**

The information that is gathered from the CHP website is used to dual purpose: first, to activate the model of the LA Interchange real-time memorial; second, the data is archived for future analysis, data visualization, and historical record keeping of highway accidents in California.

As of March 22, 2009, the database has 1,087,540 records. The first incident collected was on October 30, 2007 and was a severity 3: “Pedestrian on the

Roadway, SB (Southbound) I880 JNO (Just North of) 23RD AV” in Oakland, CA (ironically this is very close to where I live). By scraping data that exists in the public domain, artists are able to use the bureaucratic system for the purpose of filtering content to reveal patterns that open up discussion about the implications of data. By portraying data in a way that immediately affects the senses to evoke wonder, awe and contemplation of meaning in our lives, data visualization can move beyond the “anti-sublime” (Manovich)<sup>[5]</sup> of the types of information visualization that takes place in the sciences, where the purpose is to make large amounts of data intelligible for the purpose of accurate diagnosis [6].



Fig. 2. Model of fountain with digital display. (© Luther Thie)

LA Interchange intercepts data flowing from a major bureaucratic data engine, appends a subjective value to each record and displays the information in a tangible way in the environment—a simple idea made powerful by its context and artistic direction. In this regard it is a work of “aesthetic information visualization” that is “emotionally, sensually moving” (Sack) [7].

According to the CHP a person dies due to a car accident every two hours in the state of California [8]. What this means in relation to LA Interchange is that twelve severity 5 events would occur daily (on average) creating plenty of opportunity for a Los Angeles commuter to see the “main event” each day. As a sublime monument, on one level the work aestheticizes death; however, this is similar to any number of religious and commemorative memorials such as Jesus on the cross, the Berlin Holocaust Memorial or the Vietnam Veterans Memorial in Washington, DC. The difference between LA Interchange and other

monuments to the fallen is its immediacy, its real-time function of accident (and death) display. In this way it is an original monument that reflects our times when anytime, anywhere, anyone can have access to large amounts of data.

### Crash and Spectacle

LA Interchange is partly inspired by the technological spectacle of catastrophe envisioned by JG Ballard in his book *Crash*, which explores fetishistic desires symbolized by the car accident while providing a perceptive commentary on our dependence on technology and our compulsion to spectacle.

The book chronicles the psychotic Vaughan and his tribe of car crash fetish-

ists who are dedicated to desires that lead to fantastic, yet somehow perversely believable, juxtapositions of technology and human desire, thus illustrating the ambivalent feelings we have toward our reliance on technology [9]. Ballard’s views offer a mirror upon which to reflect how our values are affected by our dependence on the technologically mediated environment and how that dependence becomes fetishized.

“At certain points in this technological world that we inhabit, there are *fracture lines* that somehow allow us to *see through* into the reality that lies beyond. And one of those fracture lines is represented by the car crash. It’s a collapse in a technological system that has the same sort of revelatory power that, say, an earthquake in a major city has. Or even on a small level, something like an elevator failure forces us to—it *allows* us to—sort of *revalue* our relationship with the world of machines [10].”

In terms of Guy Debord’s *Society of the Spectacle* [11], the car itself could

represent the idea of spectacle as the social relation mediated by technology and the car crash as not only the outcome of the society of the spectacle but also an example of *pure* spectacle, symbolizing capitalism’s innate trajectory toward disaster. Along these lines, LA Interchange is both a spectacle and a counter-spectacle. As a spectacle, it is a hyperbolic show highlighting Los Angeles as the car and celebrity culture that makes the work possible, while also highlighting the vanity and extravagance underlying the culture. As a counter-spectacle, it illustrates Ballard’s idea of fracture lines that allow us to see through to the reality of the imperfection of the machine, as each accident is a “collapse in a technological system”.

I propose LA Interchange as a Ballard-esque way to “see through into the reality that lies beyond”. This “reality” conjures the idea of the sublime, of the incomprehensible greatness, transforming the data of the accident into a reflective public work.

### Public Data / Critical Public Art

After an informal presentation of this work, a friend of mine had a very strong reaction against it, calling into question the appropriateness of the work. He voiced strong opposition to the use of sensitive public data, passionate in his claim of devastation if, for instance, his daughter were to become an “event” visualized in the memorial. However, since he has processed the entire work he has become less offended. Yet, I am interested in this initial visceral response as it engenders debate about issues of public data and where this data can and should be made available.

Of course this data should be freely accessible and open to use, but a question arises once it is out in the public square. In the case of LA Interchange, no identities are ever revealed as the information comes directly from the CHP site that only registers time, date, incident type, location and area. But the fact remains that someone IS represented by the data even though their identity is not revealed. The morbid character of the events, especially in the case of a fatality, causes some viewers to question the project’s suitability for the public arena. In this light, the project is a critical public intervention similar to the counter-spectacle of Krzysztof Wodiczko’s [12] public projections onto bureaucratic buildings that expose the society of the spectacle’s mass exploitation of individuals or Rafael Lozano-Hemmer’s

Relational Architecture [13] where the public work stimulates a conversation between the place and the viewer, thereby interrogating the meaning of the site (or work) and revealing contesting issues in culture.

## Conclusion

Some other aspects of LA Interchange that deserve consideration include the fact that such a monument would use precious water resources and create community turmoil in relation to eminent domain issues. These are important issues that need to be addressed as I move forward with the work. In this regard, environmental impact reports, community meetings, and other urban planning and bureaucratic necessities will become an aspect of the work itself.

I have focused on the conceptual, cultural and technological implications of such a work in order to illustrate its meaning as a work of art that engages various audiences as well as harnesses a contemporary data stream indicative of how we as a technologically mediated culture live. Would such a work be impossible to realize? Political and bureaucratic barriers aside, I do believe it is a viable project. The working prototype offers a way for the public to get a first-hand experience of what it would be like to witness the real-time events and feel for themselves the workings of the memorial.

As a conceptual proposal for a public art project that uses real-time data, LA Interchange is an example of future displays of information that will combine massive amounts of data with physical manifestations that engage the public in new ways, revealing meaning based on new contexts. This project re-imagines the fountain as not only a contemplative water stream but also layers in a data stream to provoke thoughts regarding our interconnectedness with technology. As networks are further integrated into the fabric of our lives, creative (and critical) uses of data can be means to understand various implications of technology and reveal fascinating patterns. As data becomes more easily available for use (and abuse), the question becomes how do we translate this information appropriately.

## References

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4. I. Kant, *Observations on the Feeling of the Beautiful and Sublime*, J. T. Goldthwait, trans. (University of California Press, 1991).

5. L. Manovich [1].

6. "For example, a medical visualization is considered good if it helps doctors make a quicker and more accurate diagnosis." W. Sack, (2007?), <[socialComputingLab/Publications/wack-infoaesthetics-illustrated.doc](http://socialComputingLab/Publications/wack-infoaesthetics-illustrated.doc)>, accessed 3-2009.

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8. Los Angeles Almanac, (source California Highway Patrol, facts for 2005), <<http://www.laalmanac.com/transport/tr13f.htm>> accessed 3-2009.

9. See J.G. Ballard, *Crash* (Macmillan, 2001).

10. J.G. Ballard, *Conversations*, interview with Maura Devereux, V. Vale, ed. (Research, 2005).

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12. P. Boswell, "Krzysztof Wodiczko: Art and the Public Domain" in *Public address: Krzysztof Wodiczko*, (Minneapolis, Minn. : Walker Art Center, 1992).

13. See <http://www.lozano-hemmer.com>.