Four Public Space Installations that collect and feature visualized data

National Science Foundation
October 17, 2011

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Media Arts & Technology Program
UC Santa Barbara
Data Collecting & Visualizing in an Artistic Context

Four projects that explore data collection and its visualization:

- Pockets Full of Memories (2001-2007);
- Cell Tango (2006-2009);
- Seattle Public Library (2005-2014);
- We Are Stardust (2008)
Pockets Full of Memories

- Data collection station where public inputs information through scanning an object and describing it in a questionnaire
- Data analysis
- Large projection display of the interaction of the contributed data
- Online access to review contributions and give access to comments
<table>
<thead>
<tr>
<th>Location</th>
<th>Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pompidou</td>
<td>3327</td>
</tr>
<tr>
<td>MOCA Taipei</td>
<td>2431</td>
</tr>
<tr>
<td>Cornerhouse</td>
<td>897</td>
</tr>
<tr>
<td>Aura</td>
<td>688</td>
</tr>
<tr>
<td>Ars</td>
<td>627</td>
</tr>
<tr>
<td>Frankfurt</td>
<td>146</td>
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</tbody>
</table>

Total: 11291
Contribution color detail:

- paper: 220
- toy: 314
- keys: 175
- watch: 203
- tool: 258
- blank: 210
- jewelry: 208
- watch: 230
- ring: 150
- hand(s): 231
- wallets, purses: 153

Total: 11291
USE THE SLIDERS TO DEFINE YOUR OBJECT

- OLD
- SOFT
- NATURAL
- DISPOSABLE
- PERSONAL
- FASHIONABLE
- USEFUL

- NEW
- HARD
- SYNTHETIC
- LONG USE
- NON PERSONAL
- NOT FASHIONABLE
- USELESS

FUNCTIONAL   SYMBOLIC
Pockets Full of Memories

- **2001**: Commissioned by the Centre Pompidou Museum, Paris
- **2003**: V2 Media Festival, Rotterdam; Aura, Budapest; Ars Electronica, Linz (3 media arts festivals)
- **2004-2007**: Kiasma Museum of Contemporary Art, Helsinki; Cornerhouse Gallery, Manchester; Museum of Communication, Frankfurt; Taipei Museum of Contemporary Art
Making Visible the Invisible

- Seattle Public Library data visualized since 2005 until 2014
- Over 20,000 to 36,000 daily transactions (people checking out books, dvds, etc.)
- Over 55 million transactions to date
- Possibly the longest running dynamic data visualization artwork
Dewey Decimal Data:

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<tbody>
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Keywords: Cookery Japanese, Japanese tea ceremony, Kyoto Japan Social life and customs, Food habits Japan Kyoto
Data Mining/Analysis Directions:

- Explore "Change Over time"
- Discover patterns through a migration
- External correlation (news events) relevant?
- Feedback: How does the visualization impact circulation?
- Anomalies in the classification system
- Explore visualization forms
Data Mining/Analysis Directions:

- Explore “Change Over time”
- Discover patterns through analysis
- External correlation (news events)?
- Feedback: How does the visualization impact on circulation?
- Anomalies in the classification system
- Explore visualization forms
Data Mining/Analysis Directions:

- Explore “Change Over time”
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- Anomalies in the classification system
- Explore visualization forms
Data Analysis Directions

- Statistical
- Narrative
- Visual Explorations

1308 books out of 2290 items checked out at 15:00, 03.01.2006


Dewey Decimal Classification System Graph
This map features current circulating books according to their Dewey classification value in Generalities; Philosophy & Psychology; Religion; Social Science; Language; Natural Science & Mathematics; Technology & Applied Sciences; Arts; Literature; Geography & History.

The top 20 Dewey categories this hour

112 [741] Drawing + drawings
17 [641] Food + drink
16 [795] Athletic + outdoor sports + games
14 [300] Culture + institutions
13 [398] Folklore
12 [5] Computer programming
12 [973] General history of North America United States
12 [811] Poetry
16 [749] Down home arts
10 [728] Residential + related buildings
9 [635] Animal husbandry
9 [646] Sewing, clothing, personal living
9 [362] Social welfare problems + services
9 [133] Parapsychology + occultism
9 [972] General history of North America Middle America Mexico
9 [812] Drama
9 [305] Social groups
6 [895] Literatures of East + Southeast Asia
8 [364] Criminology
8 [332] Financial economics

Hourly Histogram of Circulation Activities

00:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00
Volume of Dewey Activities
Data Analysis Directions

- Statistical
- Narrative
- Visual Explorations

1370
112

Batman

<table>
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<th>Title</th>
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<td>Batman the Dark Knight returns</td>
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<td>Batman the resurrection of Ras Al....</td>
<td>47</td>
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<tr>
<td>Batman The killing joke</td>
<td>42</td>
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<tr>
<td>Batman vs Two Face</td>
<td>29</td>
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<tr>
<td>Batman dark victory</td>
<td>38</td>
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<td>Batman The Jokers Last Laugh</td>
<td>36</td>
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<tr>
<td>All Star Batman Robin the Boy W...</td>
<td>32</td>
</tr>
<tr>
<td>Batman the man who laughs</td>
<td>32</td>
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</tbody>
</table>

The Incredible Hulk

Avengers

Fantastic Four

Spider-Man

Superman

X-Men

11 Jul 2008
$34,595,115

18 Jul 2008
$158,411,493
Data Analysis Directions

- Statistical
- Narrative
- Visual Explorations
Data Analysis Directions

- Statistical
- Narrative
- Play of the Imagination
- Visual Explorations

THE HOTTEST BOOK
QIAN LIU | CIRCULAR TREE MAP

TOP 10 BOOKS NUMBER, CATEGORY AND TITLE

95542 [158] Maximum achievement the proven syst...
44485 [158] Fundamental 6 plays for winning bl...
24476 [138] Get anyone to do anything and not or...
14095 [132] Emotions revealed recognizing faces ...
14041 [130] Blink the power of believing without...
12781 [170] Caught in the act reflections on be...
11493 [165] Learned optimism
10596 [163] artistic way a spiritual path to hip...
10400 [158] Emotional alchemy how the mind can ...
96078 [155] needs of the dying a guide for brin...
Data Analysis Directions

- Statistical
- Narrative
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Data Analysis Directions

- Statistical
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Dewey Category Breakdown:

000 Computer science & information
010 Bibliographies
020 Library & information sciences
030 Encyclopedias & books of facts
040 [Unassigned]
050 Magazines, journals & serials
060 Associations, organizations & museums
070 News media, journalism & publishing
080 Quotations
090 Manuscripts & rare books
Data Analysis Directions

- Statistical
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TIME SMALL

This graph shows a single book library report based on the data from Seattle Public Library between 2010 and 2011. It captures the usage patterns when the book is checked out and returned. Sometimes when the book is returned, a line is shown between the check-out point and the shelf point. The brighter side of the line represents check-in point and darker side of the line represents shelf-out point.

DAN LI 1 MAT 2501 WINTER 2011
We Are Stardust (2008)

- A collaboration with NASA Spitzer Science Center California Institute of Technology, Pasadena

Spitzer is an infra-red temperature sensing instrument that is orbiting the sun, and trailing in the earth's orbit.
We Are Stardust (2008)

- A collaboration with NASA Spitzer Science Center, California Institute of the Technology, Pasadena
- Spitzer is an infra-red temperature sensing instrument that is orbiting the sun, and trailing in the earth's orbit
- Where are the scientists looking?
- Can all the observations be visually mapped?
<table>
<thead>
<tr>
<th>Target_Name</th>
<th>RA (J2000)</th>
<th>Dec (J2000)</th>
<th>F1</th>
<th>Source_Name</th>
<th>plate</th>
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</tr>
</tbody>
</table>

**Data Source for Mapping Schedule of Observations**

- **RA (J2000)**: Right Ascension in the J2000 coordinate system.
- **Dec (J2000)**: Declination in the J2000 coordinate system.
- **F1**: Filter bandpass.
- **Source_Name**: Name of the source.
- **plate**: Plate number.
- **AOT**: Air mass of transit.
- **min_dur**: Minimum duration of the observation.
- **Scheduled_Time (UTC)**: Scheduled time of the observation in UTC.
- **AOR Key**: Key for the AOR.
- **AOR_LABEL**: Label for the AOR.
We Are Stardust (2008)
We Are Stardust (2008)

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Can you see me now?  
An installation of cellphone photos mesmerizes with variety, spontaneity - and anthropology

Alex Goodman, a Wellesley College student, with “Cell Tango,” an installation of constantly changing cellphone photos, including her cupcake image.

By Cato McQuaid, Globe Correspondent / October 9, 2009
Cell_Clusters

Submitted images have yellow frame, surrounded by software selected images from the whole Flickr site
Cell_Burst

Most recent contributions open like high-speed flower animation, first by their tags, and then with software selected images from the large Flickr site.
Data Visualization as Art Summary

- A cultural practice
- The public as active participant
- Necessity to create an aesthetic context through narrative
- **Data collection & its management:** Complex data processing
- **Software design:** Robust, Flexible for different environments, fast, extensible
- **Visualization design:** Allows for long term content change
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