Spatio-Temporal Constraints on Social Networks - The Visualization Perspective

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Specialist Meeting of Spatio-Temporal Constraints on Social Networks
Upham Hotel, Santa Barbara, CA, December 13-14, 2010

(This research is partially sponsored by NSF Grant BCS-0616724.)

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Visualization of Social Networks

Shih-Lung Shaw, Department of Geography

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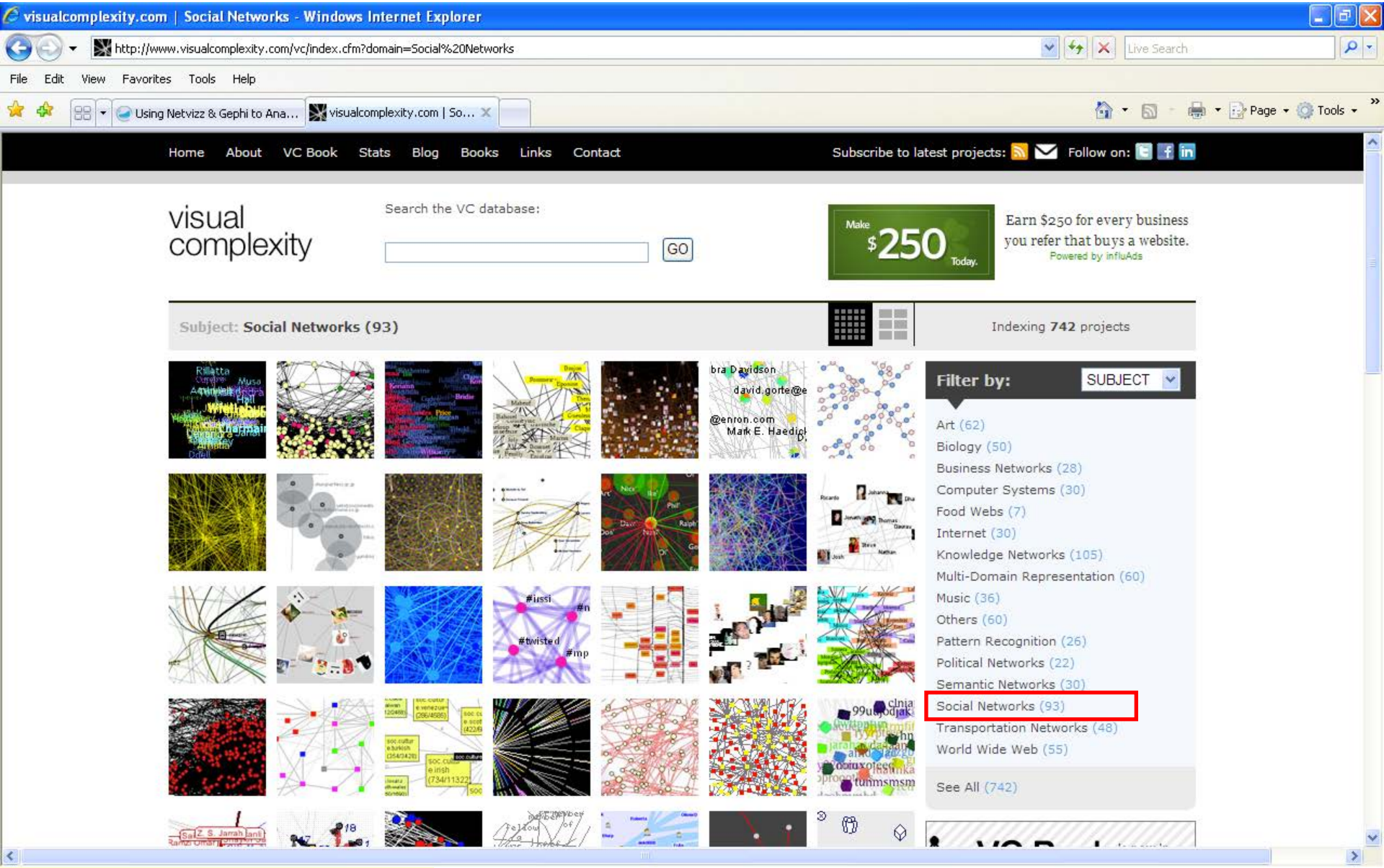
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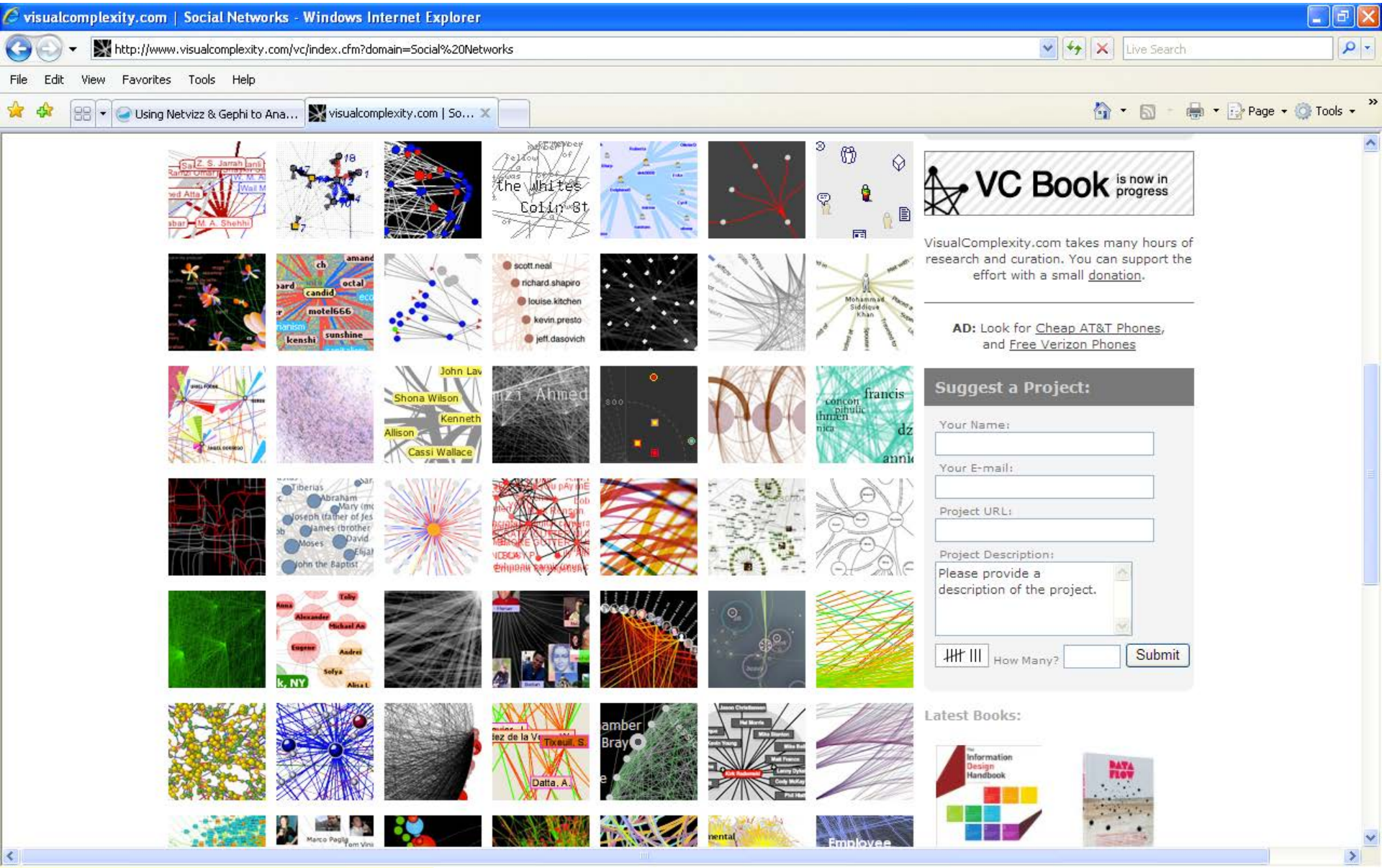
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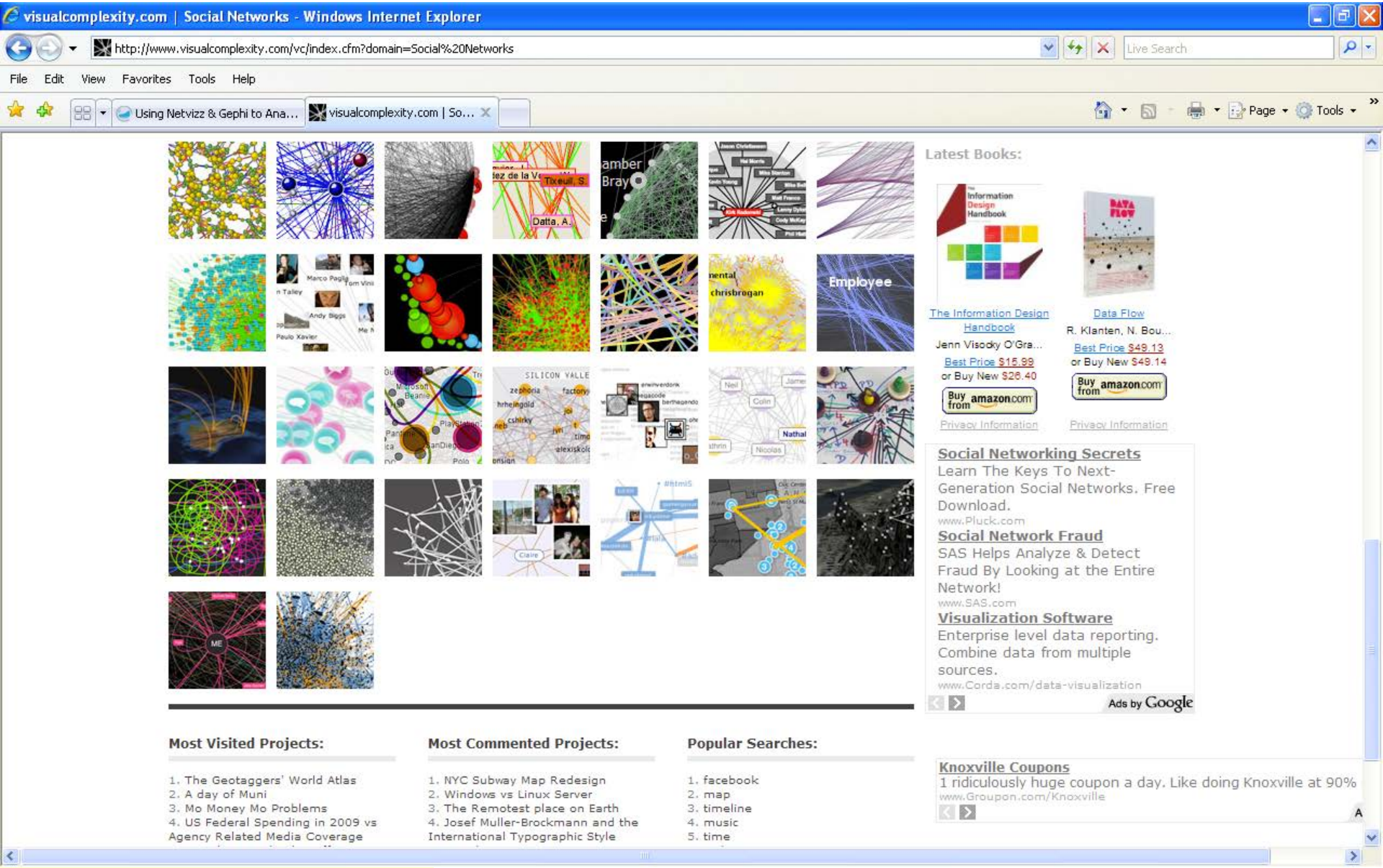
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Many of them are based on

Node-Link Network concepts

focusing on topology and connectivity

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Facebook Visualiser

Author(s):
Sebastian Van Sande

Institution:
(unknown)

Year:
2007

URL:
http://vansande.org/facebook/visualiser/

Project Description:
Visualiser is a tool to graphically explore your facebook social network. You can use it to see how all your contacts are connected to each other, and in the process disclose unknown common friends. Other FOAF (friend-of-a-friend) disclosure would be interesting, but unfortunately, the Facebook API doesn't include this important bit of data.

The tool allows filtering your network by Gender and Relationship Status (single, engaged, etc). You can also choose to see the inner connections of your facebook network and play with the distance between nodes (friends).

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QuiBids.com
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Comments (5):

it works well initially but after a few times playing around the links don't show and it begins to get messy and go out of frames. good aplication though. good work sebastian.

Posted by ram on May 28, 2008 at 8:15 AM (GMT)

Great work Sebastian. It is through watching this application that I understand how the friend of friend idea works. Pity I cannot explore those non-friends that belong to my current friends.

Posted by KANG Ghee Keong on Feb 13, 2009 at 7:06 AM (GMT)

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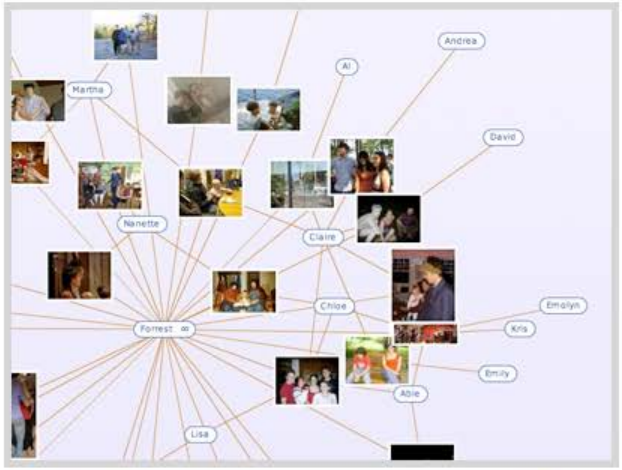

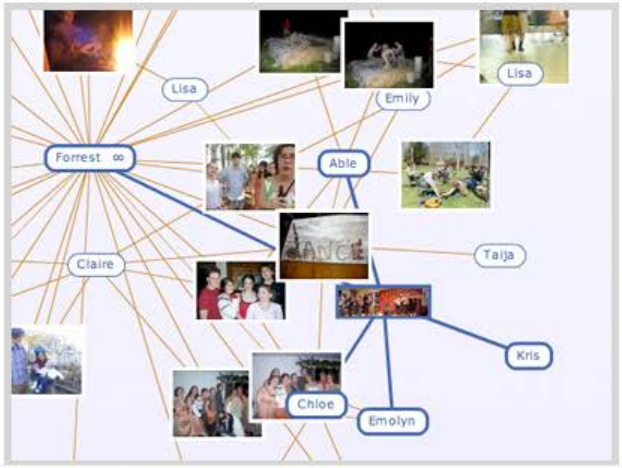

Facebook Tag Graph

Author(s):
Forrest Oliphant

Institution:
Sembiki Interactive

Year:
2009

URL:
http://apps.facebook.com/taggraph/

Project Description:
This new version of Tag Graph for Facebook, by Forrest Oliphant, brings considering improvements in terms of layout and navigation. It's an interesting way of browsing your friends' pictures and knowing in a glimpse with whom you share more photos. Not entirely convinced of the need for the background image on rollover state, but overall it's moving in a good direction.

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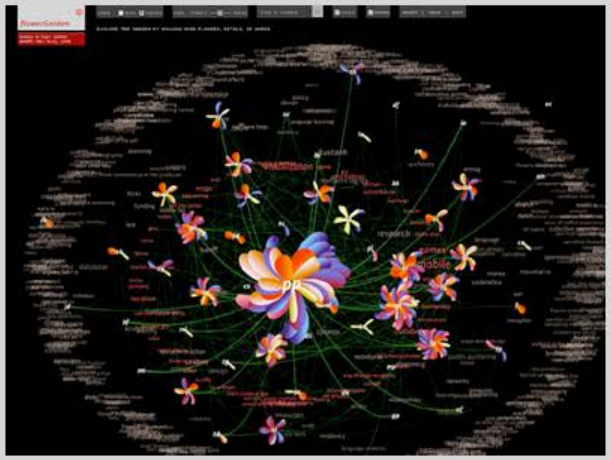

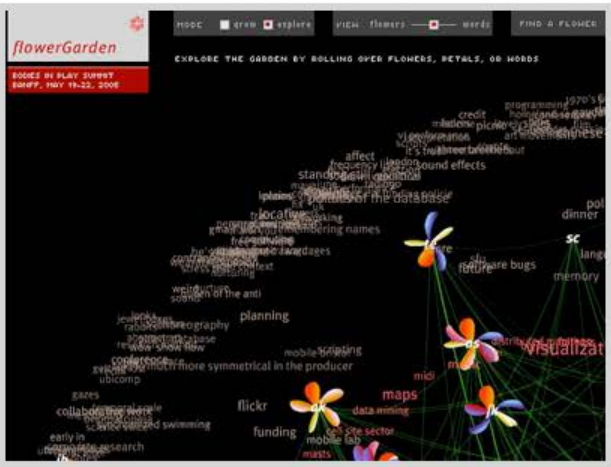

flowerGarden

Author(s):
Greg Judelman, Maria Lantin

Institution:
Visualization Lab, Banff New Media Institute

Year:
2005

URL:
http://www.gregjudelman.com/flowergarden.html

Project Description:
flowerGarden is an web-based software application, produced in Flash, for real-time social network and conversation visualization. It was used at the 3-day Bodies in Play summit in Banff, May 2005, at which the 50 participants were invited to input information about who they spoke to and what they discussed during the duration of the event. The visualization was projected on a large screen in the main summit venue to reflect the current state of the social network and discussion space of the summit.

Each participant, upon entering information into a form, is visually represented by a flower, with a petal growing on the flower in real-time as a new conversation is entered. The flowers of individuals who have conversed with one another are connected by green vines, and the closer two flowers are distanced from each other the more those people have spoken. The concepts discussed between all participants are laid out in the background according to their frequency of use. By rolling over flowers, petals, and words, different perspectives of the information can be seen.

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Comments (1):

I teach and train people working in peace and conflict. I would like to use a static image of your flower garden to bring home to the group some concepts relating to their own learning process. Would you allow me to use your image for that in teaching and training courses?

Posted by Diane Hendrick on Apr 13, 2007 at 8:26 AM (GMT)

visualcomplexity.com | Mapping WoW Arena Teams - Windows Internet Explorer

http://www.visualcomplexity.com/vc/project_details.cfm?id=583&index=74&domain=Social%20Networks

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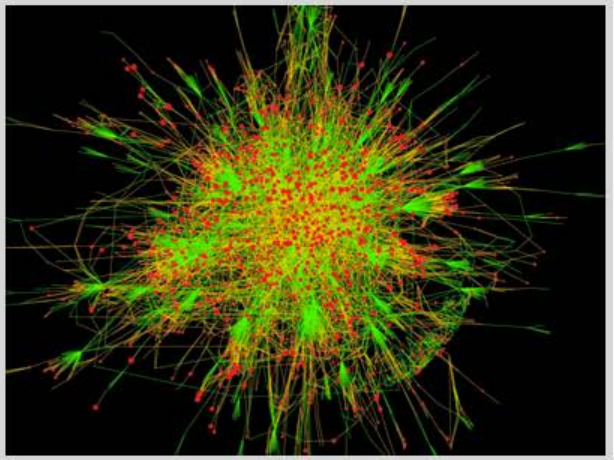

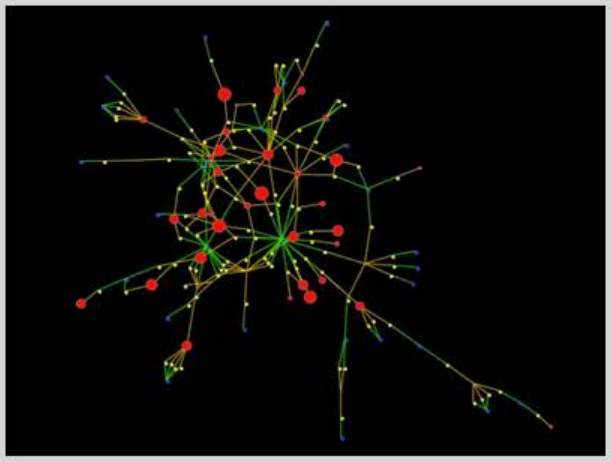

Mapping WoW Arena Teams

Author(s):
Matt Rubinstein, Yarun Luon, Sameer Halai, John Suciu

Institution:
University of Michigan - School of Information

Year:
2007

URL:
http://www-personal.umich.edu/~ladamic/courses/si508f07/projects/WoW.pdf

Project Description:
According to the authors of this paper, in the past three years there has been an increased interest in Massive Multiplayer Online Games (MMOGs) in the academic community, specifically with the game World of Warcraft (WoW). Several areas of research have analyzed individual player attributes such as player motivations (Yee, 2005) and player characteristics (Bartle, 1996). An increasing amount of research has been dedicated to the social aspects of the game. Research in this area has looked at various types of social interactions among players, guild formation, and even the spread of viruses across a server.

This paper attempts to describe the structure of arena teams in relation to the overall structure of the social network on a particular server. By looking at guild relationships and arena team composition, the authors hope to shed light on which arena teams have the highest efficacy and are most successful in "ladder" competition. Currently, arena team players are given a rating based upon how many battles they won. By comparing this to arena team composition via by treating the rating of each arena team as a vector, this study aims at determining which factors are most important in developing an accomplished team via network visualization. In particular, the authors wanted to find out how an arena team's overall centrality in the network affects their overall success, and in addition, if there is a contrast in how arena teams are formed on large versus small servers (either through guild or non-guild relationships).

The first image represents a look into the Spinebreaker (PvP) server - 3 mode Alliance side: 16,534 players, 4065 guilds, and 5758 arena teams. The second is a visualization of the top 50 Horde teams in the the Windrunner (PvE) server.

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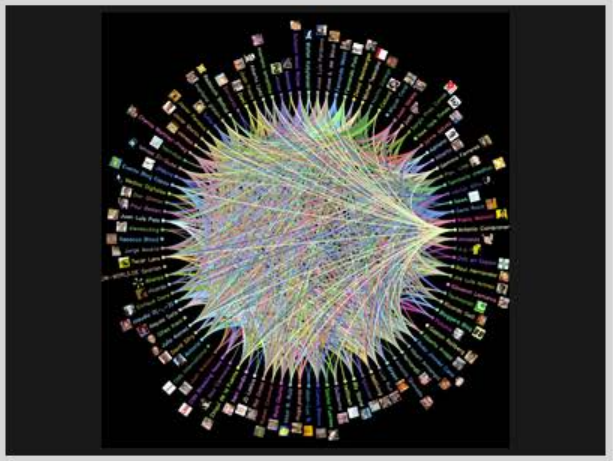

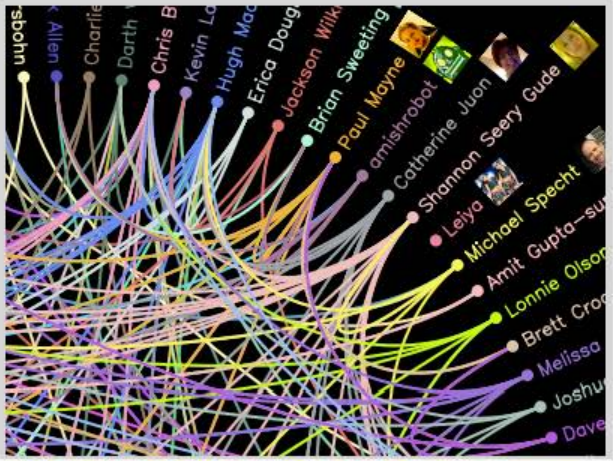

TweetWheel

Author(s):
Augusto Becciu

Institution:
(unknown)

Year:
2008

URL:
http://www.tweetwheel.com/

Project Description:
TweetWheel is a simple tool that allows an immediate visual representation of one's Twitter network. Users can either go to the site and input their Twitter ID, or type directly into the browser: "www.tweetwheel.com/yourTwitterID". The tool then renders the user's entire twitter network, and inner links, into a Radial Convergence layout.

0 tweet

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Posted by Mike on Sep 24, 2009 at 2:35 AM (GMT)

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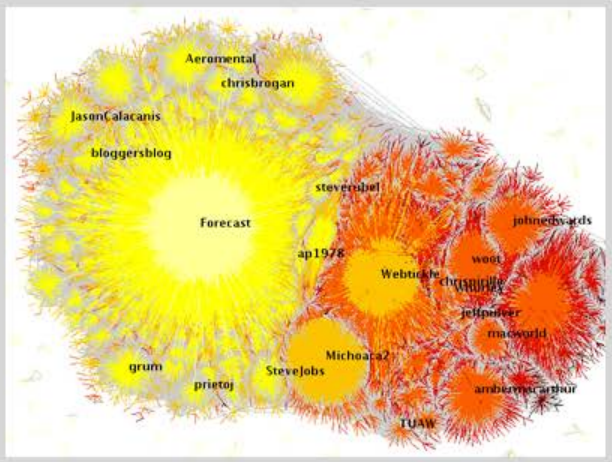

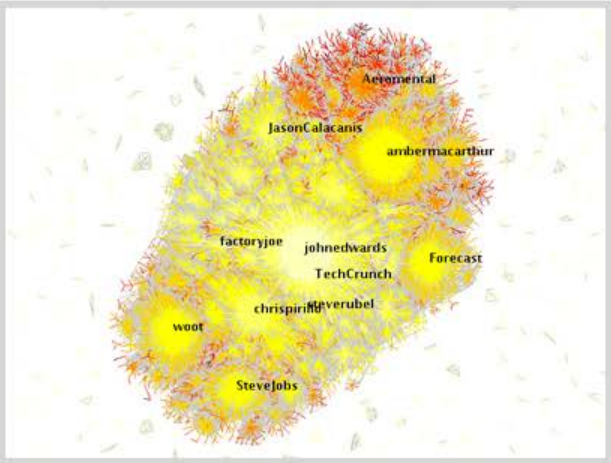

Twitter Social Network Analysis

Author(s):
Akshay Java

Institution:
ebiquity group

Year:
2007

URL:
http://tinyurl.com/2qtbw8

Project Description:
Akshay Java, from ebiquity group, used the Large Graph Layout (LGL) tool to visualize a large social network on Twitter. The top graph shown here was built using contacts from about 25,000 users. Notice that there is a link connecting two users if either one has the other as a friend and hence it is an undirected graph (of about 250,000 edges). Compare this to the bottom graph that is constructed using only users who are mutually acquainted. i.e. A knows B and also B knows A.

As Akshay reveals in his post: "I find that visualizing such large graphs is quite a challenge and to glean meaningful information from it is even more difficult". However, he goes further in explaining that some insights can still be gained from this project. Akshay points out that a number of users seem to be trying to win a popularity contest of some sort, while a number of bloggers and (perhaps fake) celebrity profiles have a huge fan following in Twitter. He also mentions how the two graphs look very different on account of the fact that users with public profiles get a lot of followers whom they might not really know and would hence never add them as an acquaintance. But to really understand what the differences are one would need to look at the community structure and properties of the two graphs.

ebiquity group has also explored the Twitter API in other projects [1] [2] in order to get a better understanding of the microblogging trend.

0 tweet

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Discover Why Thousands of People are "Jumping" to Change Their Life
www.QuantumJumping.com
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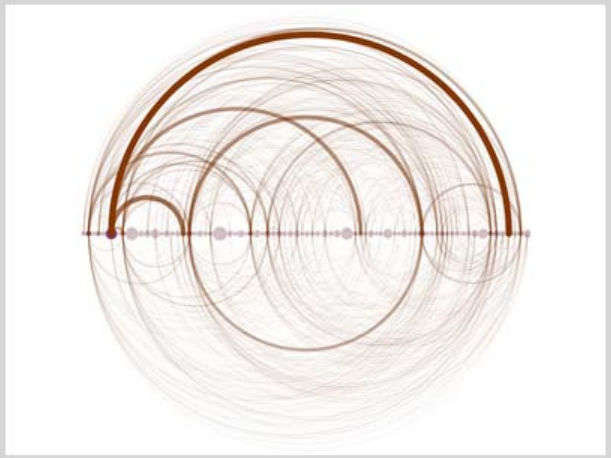


IRC Arcs

Author(s):
Martin Dittus

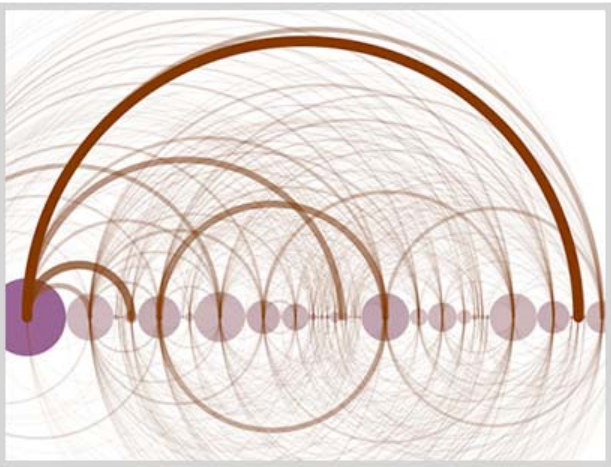
Institution:
(unknown)

Year:
2006

URL:
http://mardoen.textdriven.com/irc_arcs/

Project Description:
This is a simple visualization of IRC communication behavior that tries to answer questions such as: Who is talking to whom? Or, more appropriately: Who is namedropping whom?

Circles represent users while arcs represent references, which are understood as messages from a user containing the name of another user. Arcs are directional and drawn clockwise: In the upper half of a graph they point from left to right, in the bottom half from right to left. Arc strength corresponds to the number of references from the source to the target.



This visualization favors strong social connections over sociability: Frequent references between the same two users feature more prominently than combined references from several sources to a single target.

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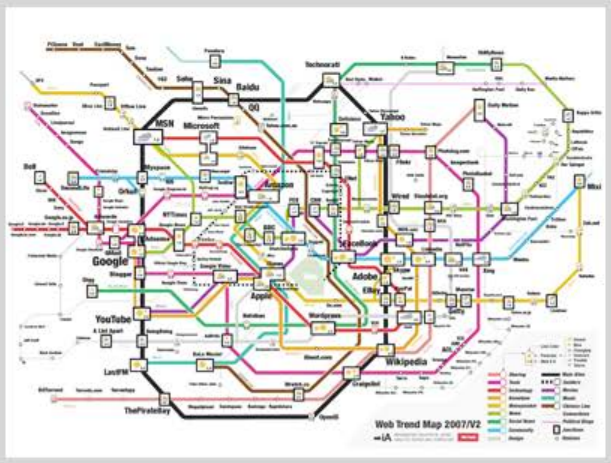

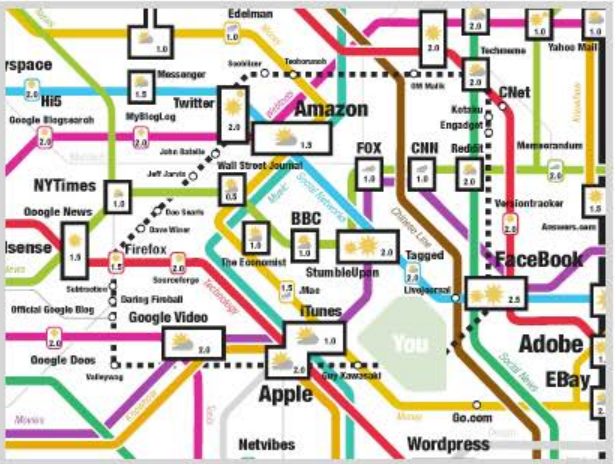

Web Trend Map 2007

Author(s):
(unknown)

Institution:
Information Architects

Year:
2007

URL:
http://www.informationarchitects.jp/ia-trendmap-2007v2

Project Description:
Information Architects first created the Web Trend Map as a Christmas and New Year's present to their clients and readers. The map shown here is an updated version (v2) of the original work. The map shows all the big players, ordered by category, proximity, success, popularity and perspective; using the Tokyo Metro map as an underlying reference.

The new trend map features much more websites than the original one. As the authors explain: "While the focus is still on English language websites (because that is where it's at), we have added some Japanese sites (a mystery to most of you gaijin), some German sites (yeah, there are some popular ones) and a Chinese line (the second Internet)". The Tokyo Metro map has been substantially modified to fit the needs of the Web Trend Map and the different trend lines have been renamed, simplified and cleaned up (e.g. if you follow the tech line -- you will find tech sites, if you follow the news line -- you will find news sites).

By associating certain websites to physical locations in Tokyo, people who know the city well will probably find many hints and sarcastic jokes hidden in the map.

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Comments (1):

other strange world web map here : http://explomap.free.fr/?p=5

visualcomplexity.com | Web Trend Map v4.0 - Windows Internet Explorer

http://www.visualcomplexity.com/vc/project_details.cfm?id=674&index=53&domain=World%20Wide%20Web

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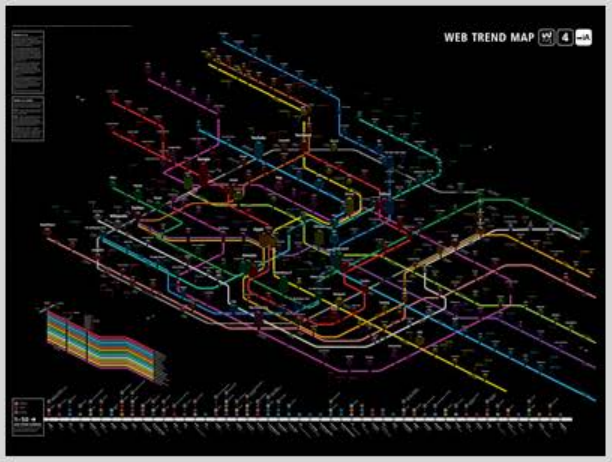

Web Trend Map v4.0

Author(s):
(unknown)

Institution:
Information Architects

Year:
2009

URL:
http://informationarchitects.jp/web-trend-map-4-final-beta/

Project Description:
In 2007 the strategic design agency Information Architects (iA), based in Tokyo, Japan, launched their first Web Trend Map (of a future series of 4). Although they were candid enough with their first version, stating that it was "totally unscientific and almost useless, but definitely fun to look at", they ended up realizing the popularity of the project. What started as a playful Christmas gift for their clients, quickly became an expected yearly publication by iA, with the authors becoming more serious and laborious with each new iteration. This yearly publication maps the 333 most influential Web domains and the 111 most influential internet people onto a series of alternated versions of the Tokyo Metro map.

Shown here is the fourth version of the Web Trend Map, released in April 2009, and revealing a considerable graphical departure from previous versions. You can see them all side-by-side on this blog post.

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Visualization of network growth/changes

Shih-Lung Shaw, Department of Geography

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http://www.visualcomplexity.com/vc/project_details.cfm?id=739&index=93&domain=Social%20Networks

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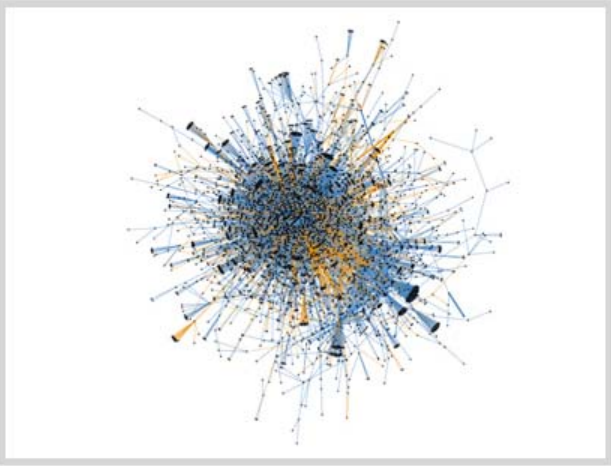

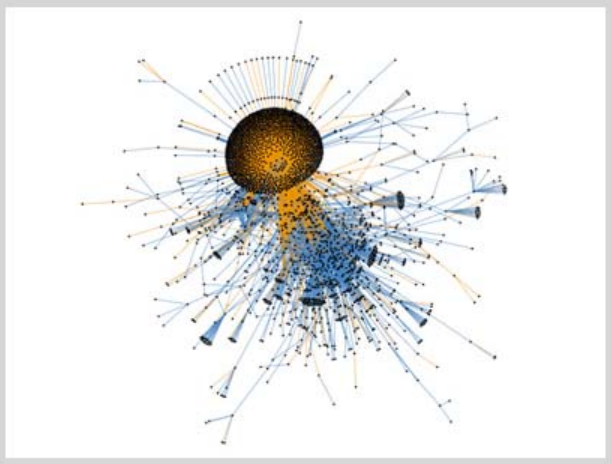

Truthy

Author(s):
(unknown)

Institution:
Indiana University Center for Complex Networks and Systems Research

Year:
2010

URL:
http://truthy.indiana.edu/

Project Description:
Truthy is a system to analyze and visualize the diffusion of information on Twitter. The Truthy system evaluates thousands of tweets an hour to identify new and emerging bursts of activity around memes of various flavors. The data and statistics provided by Truthy are designed to aid in the study of social epidemics: How do memes propagate through the Twittersphere? What causes a burst of popularity?

Truthy is also planned to detect political smears, astroturfing, misinformation, and other social pollution. While the vast majority of memes arise in a perfectly organic manner, driven by the complex mechanisms of life on the Web, some are engineered by the shady machinery of high-profile congressional campaigns. Truthy uses a sophisticated combination of text and data mining, social network analysis, and complex networks models.

0 tweet

Statistical Data Analysis
Manage Data Better With IBM SPSS Statistics. See the Online Demo Now
www.cognos.com/spss_analytics
Ads by Google

Comments (0):

Note Before you submit your comment, bear in mind there's no guarantee it will be seen by this project's author. In case you want to contact the author directly, please follow the provided URL.

Leave a Comment:

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visualcomplexity.com | Growth of a Twitter Graph - Windows Internet Explorer

http://www.visualcomplexity.com/vc/project_details.cfm?id=634&index=81&domain=Social%20Networks

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Social Networks Back < Prev | 81 of 93 | Next >

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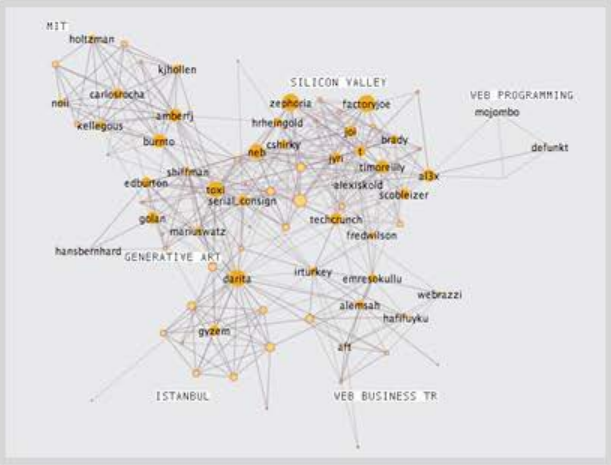

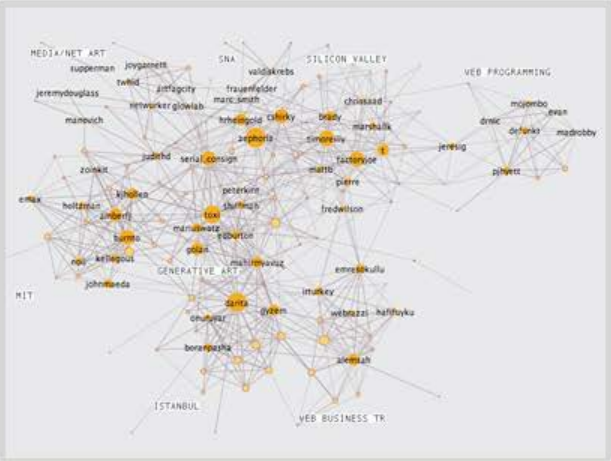

Growth of a Twitter Graph

Author(s):
Burak Arikan

Institution:
(unknown)

Year:
2008

URL:
http://blog.burak-arikan.com/growth-of-a-twitter-graph/

Project Description:
Burak Arikan is an artist and researcher who focuses on creating networked systems that evolve with the interactions of people and machines. He has also been previously featured in VC. One of his latest pieces has been an experiment with the Twitter API, where he tracked the growth of his Twitter network over a period of 3 weeks. Burak was trying to understand how connections and particular clusters might expand or contract over time.

The first image is a portrait of Burak's Twitter graph on the first week of the experiment, when he was following 80 people. Burak only mapped the interconnections between friends, removing himself from the picture, and then labeled the 6 main clusters: "MIT", "silicon valley", "web programming", "generative art", "Istanbul", and "web business tr (Turkey)". As he explains: "The silicon valley cluster is large and dense compared to others. The MIT cluster is almost like a clique (every person connected to every other). Generative art is quite close to Silicon Valley, mostly bridged through the user **neb**. Obviously the Turkish web business cluster has many connections to the Silicon Valley, techcrunch being a major bridge here. The web programming cluster is very small, surprisingly it is connected to Silicon Valley only through the user **al3x**, who works at Twitter".

To test the importance of key bridging users, Burak decided to remove them and see if the graph still hold together. Many of these changes are represented on his map of week 3 (second image) where more bridges and denser clusters are discernible within his network of 158 people.

Apart from a careful analysis of some of the patterns emerging in this experiment, which can be further explored in his blog post, Burak poses an important question worth considering: "Do these people mind about what these diagrams reveal about their privacy, while all the data is public?".

0 tweet

visualcomplexity.com | Social Collider - Windows Internet Explorer

http://www.visualcomplexity.com/vc/project_details.cfm?id=661&index=85&domain=Social%20Networks

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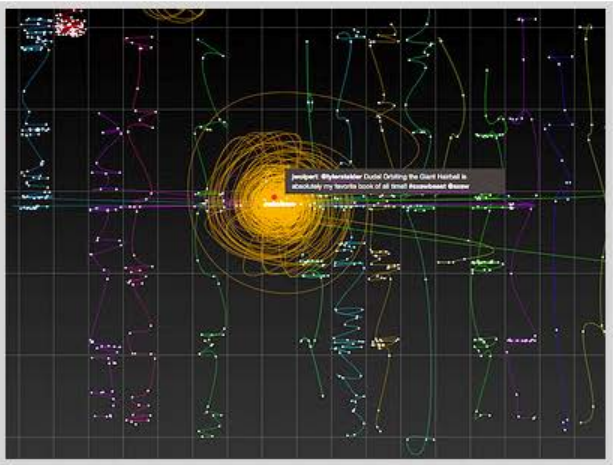

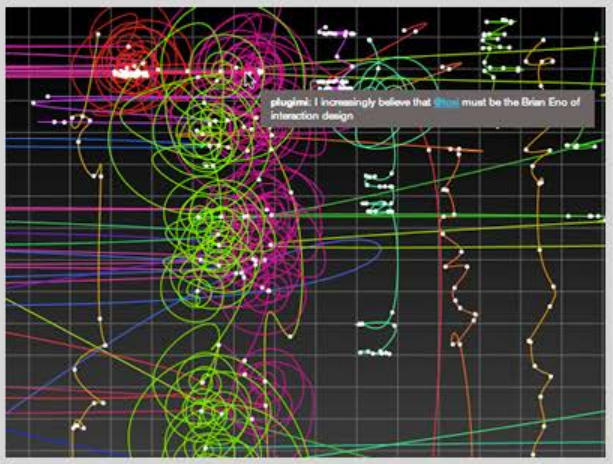

Social Collider

Author(s):
Karsten Schmidt, Sascha Pohflepp

Institution:
(unknown)

Year:
2009

URL:
http://socialcollider.net/

Project Description:
The Social Collider reveals cross-connections between conversations on Twitter.

With the Internet's promise of instant and absolute connectedness, two things appear to be curiously underrepresented: both temporal and lateral perspective of our data-trails. Yet, the amount of data we are constantly producing provides a whole world of contexts, many of which can reveal astonishing relationships if only looked at through time.

This experiment explores these possibilities by starting with messages on the microblogging-platform Twitter. One can search for usernames or topics, which are tracked through time and visualized much like the way a particle collider draws pictures of subatomic matter. Posts that didn't resonate with anyone just connect to the next item in the stream. The ones that did, however, spin off and horizontally link to users or topics who relate to them, either directly or in terms of their content.

The Social Collider acts as a metaphorical instrument which can be used to make visible how memes get created and how they propagate. Ideally, it might catch the Zeitgeist at work.

You can read more about the project here.

2 retweet

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1 ridiculously huge coupon a day. Like doing Knoxville at 90% off!
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Comments (0):

VisualComplexity.com

Visualization with Time/Locations

Shih-Lung Shaw, Department of Geography

THE UNIVERSITY of TENNESSEE KNOXVILLE

visualcomplexity.com | Data visualisation of a social network - Windows Internet Explorer

http://www.visualcomplexity.com/vc/project_details.cfm?id=454&index=54&domain=Social%20Networks

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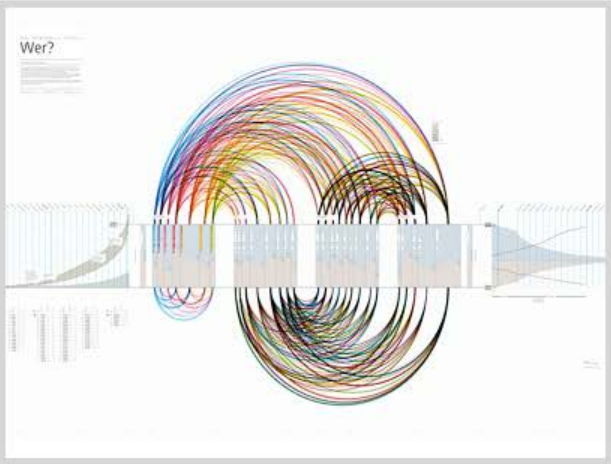

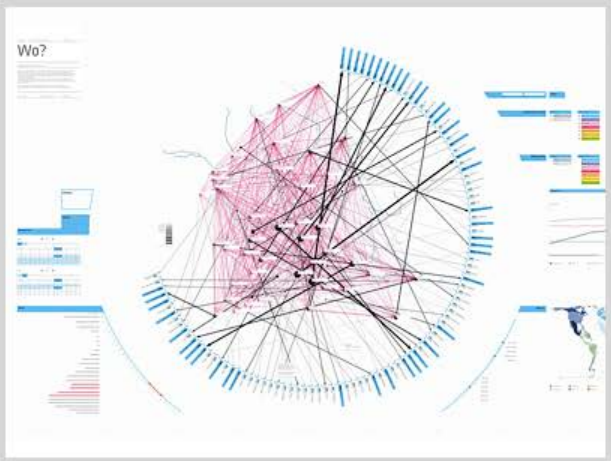

Data visualisation of a social network

Author(s):
Felix Heinen

Institution:
(unknown)

Year:
2007

URL:
http://www.felixheinen.de/020.html

Project Description:
For his final year project in information design, Felix Heinen created an amazing set of visualizations of different aspects of a social network. Two big (200 x 90 cm - 80 x 36 inches) posters show the variety and attitudes of members from an internet community like MySpace.

On the first poster you can see the functions used, as well as additional information, such as age, educational background, family status, gender and how often they are logged in. In a glimpse, a view into the key demographic data available for every member's profile.

The second poster gives you an overview of the geographic location of all members, based on a world map. The aim was to provide the management team with a visualization tool that would allow a better understanding of the community members, rather than a just a simple scan of their database. Felix has also developed a flash based interactive tool that allows users to navigate through all the collected data.

0 tweet

Visualization Software
Data visualization dashboards. Easy Accurate, Efficient. Try Now Free.
www.Corda.com
Ads by Google

Comments (12):

best wishes for your further live.

Posted by erzeuger on Apr 26, 2007 at 3:05 PM (GMT)

Cool designs. Is there any detail introductions or papers about your design?

visualcomplexity.com | Twitter Conversations Map - Windows Internet Explorer

http://www.visualcomplexity.com/vc/project_details.cfm?id=600&index=78&domain=Social%20Networks

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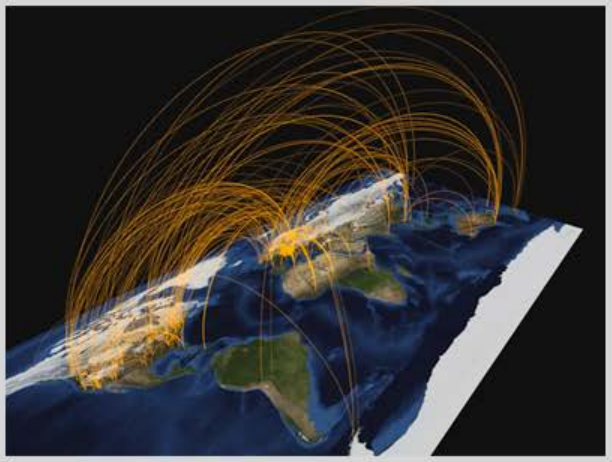
Social Networks Back < Prev | 78 of 93 | Next > permalink | email this | bookmark



Twitter Conversations Map

Author(s):
Walter Rafelsberger

Institution:
MODUL University Vienna / Department of New Media Technology

Year:
2008

URL:
http://flickr.com/photos/walterra/2631170956/in/photostream/

Project Description:
This visualization created by Walter Rafelsberger using Processing shows the conversations of about 1500 users from the microblogging service Twitter. The arcs basically link the locations of users who talk to each other. The geocoding was done filtering location info from the users profile pages and looking it up with Geonames.

1 retweet

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www.Corda.com/data-visualization
Ads by Google

Comments (6):

Wow. Statistics and arts are getting closer these days, or so it seems.

Posted by ritchie on Jul 4, 2008 at 9:09 PM (GMT)

It would be kind of interesting to see this same information but with the earth as a globe, and the lines going *through* it. That would give more of a sense of information moving around the planet, rather than over an abstract surface like a flat map. Dunno. Just a thought.

Posted by Trev on Jul 15, 2008 at 2:29 PM (GMT)

I second Trev -- curved lines skipping over the map are very popular, but it would be really cool to see straight lines running through a globe.

Posted by Cristos Lianides-Chin on Jul 28, 2008 at 3:44 PM (GMT)

visualcomplexity.com | Invisible Cities - Windows Internet Explorer

http://www.visualcomplexity.com/vc/project_details.cfm?id=733&index=91&domain=Social%20Networks

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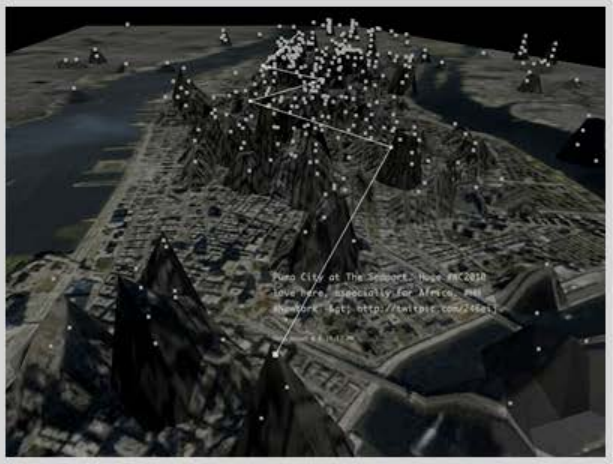

Invisible Cities

Author(s):
Christian Marc Schmidt, Liangjie Xia

Institution:
(unknown)

Year:
2010

URL:
http://www.christianmarcschmidt.com/invisiblecities/

Project Description:
Invisible Cities maps information from one realm - online social networks - to another: an immersive, three dimensional space. It displays geocoded activity from online services such as Twitter and Flickr, both in real-time and in aggregate. Real-time activity is represented as individual nodes that appear whenever a message or image is posted. Aggregate activity is reflected in the underlying terrain: over time, the landscape warps as data is accrued, creating hills and valleys representing areas with high and low densities of data.

The interplay between the aggregate and the real-time recreates the kind of dynamics present within the physical world, where the city is both a vessel for and a product of human activity. Nodes are connected by narrative threads, based on themes emerging from the overlaid information. These pathways create dense meta-networks of meaning, blanketing the terrain and connecting disparate areas of the city.

0 tweet

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1 ridiculously huge coupon a day. Get 50-90% off your city's best!
www.Groupon.com
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Comments (0):

Note Before you submit your comment, bear in mind there's no guarantee it will be seen by this project's author. In case you want to contact the author directly, please follow the provided URL.

Leave a Comment:

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visualcomplexity.com | Weeplaces - Windows Internet Explorer

http://www.visualcomplexity.com/vc/project_details.cfm?id=732&index=90&domain=Social%20Networks

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Weeplaces

Author(s):
(unknown)

Institution:
Movity

Year:
2010

URL:
http://weeplaces.com/foursquare/

Project Description:
Weeplaces is an interesting application mapping an individual's shared locations on Foursquare. Blue circles depict popular places, which grow depending on the number of visits, while yellow lines connect current and previous locations with the goal of charting one's movement. A timeline on the bottom also provides additional information on the volume of check-ins over time. Anyone with a Foursquare account can simply login to Weeplaces and start mapping their trails.

0 tweet

$87.99 Samsung 46" HDTV
BREAKING: Samsung 46" HDTVs being sold for up to 95% off on QuiBids!
QuiBids.com
Ads by Google

Comments (0):

Note Before you submit your comment, bear in mind there's no guarantee it will be seen by this project's author. In case you want to contact the author directly, please follow the provided URL.

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A Space-Time GIS approach

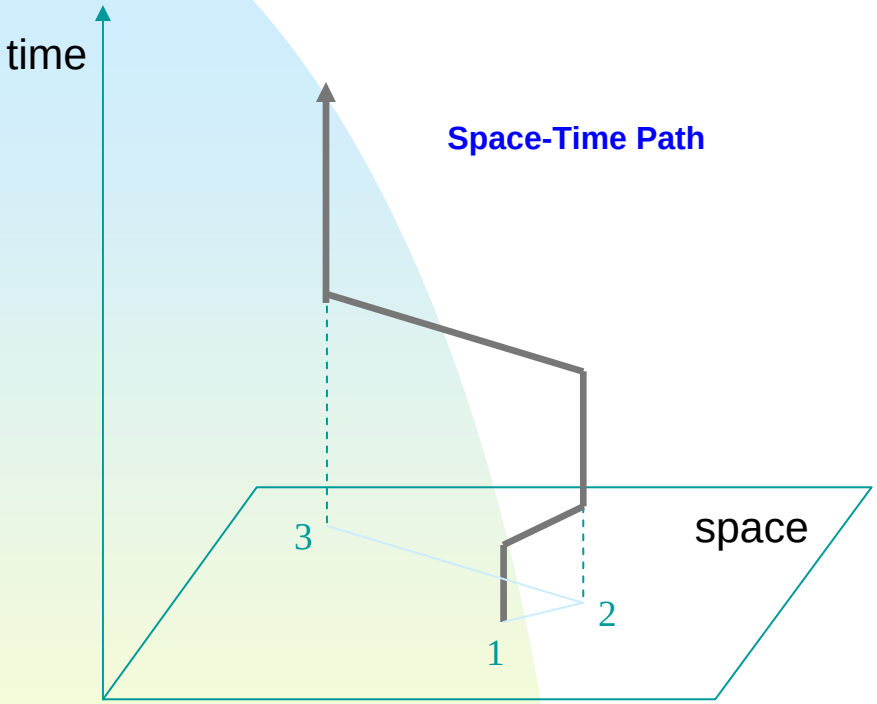
Based on Hägerstrand's Time Geography and a Temporal Dynamic Segmentation

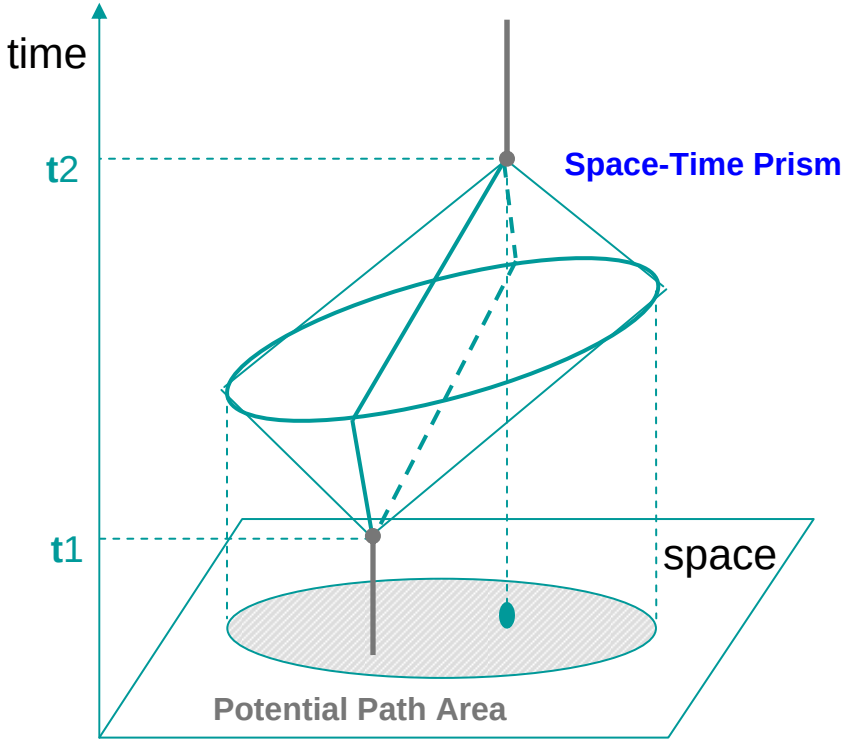
Shih-Lung Shaw, Department of Geography

THE UNIVERSITY of TENNESSEE KNOXVILLE

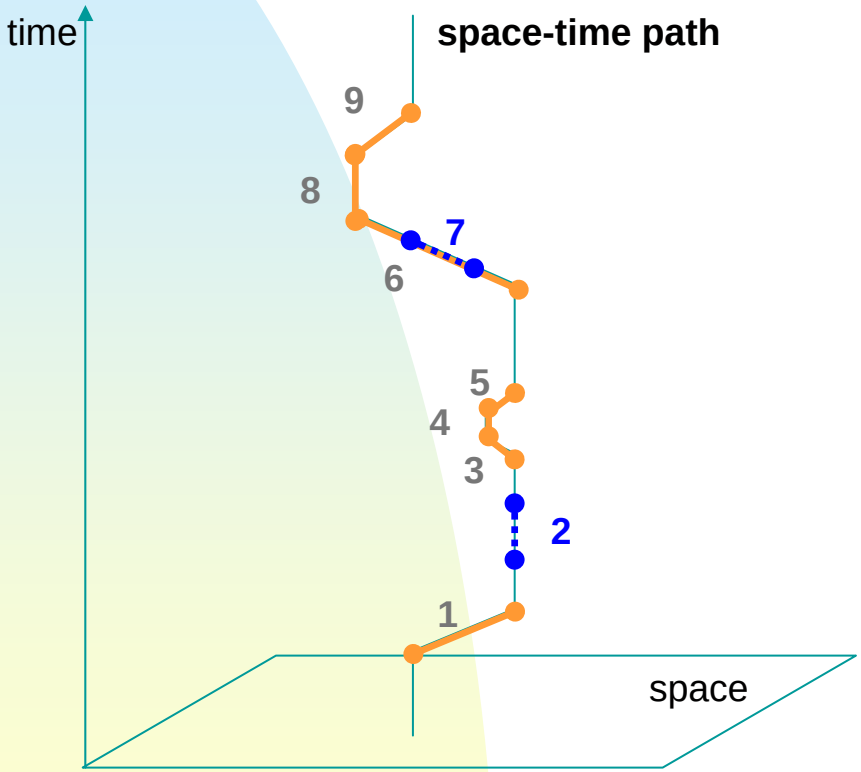
Hägerstrand's Time Geography:

- Hägerstrand's time geography examines human activities under various constraints in a space–time context.
- Space and time are connected through the concept of space–time path, which depicts the sequence of an individual's activities at various locations over a time period.
- The possible locations that a person can visit within a given time window form a continuous space known as a space–time prism.


time
Space-Time Path
space
3
2
1


time
t2
Space-Time Prism
t1
space
Potential Path Area

Temporal Dynamic Segmentation:



Physical activities:

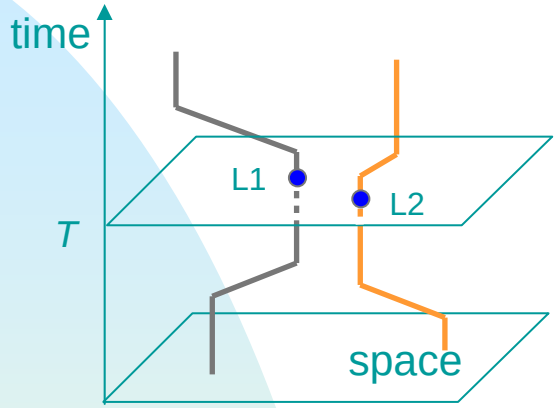
1. Drive to work
3. Walk to lunch
4. Have lunch
5. Walk back from lunch
6. Drive back home
8. Grocery shopping
9. Return home

Virtual activities:

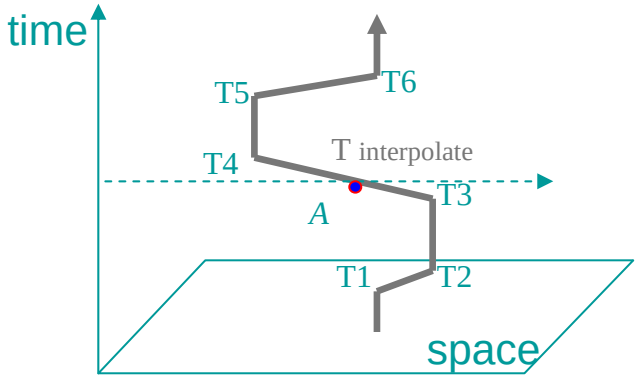
2. Instant messaging with colleagues
7. Receive a cell phone call from spouse to do grocery shopping

- Three types of constraints:
  - Capability Constraints: Constraints that limit the activities of an individual because of his/her biological construction and/or the tools he/she can command.
  - Authority Constraints: Constraints imposed by a domain within which things and events are under the control of a given individual or a given group.
  - Coupling Constraints: Constraints that deal with the interactions of an individual with other people or entities in a space–time context.

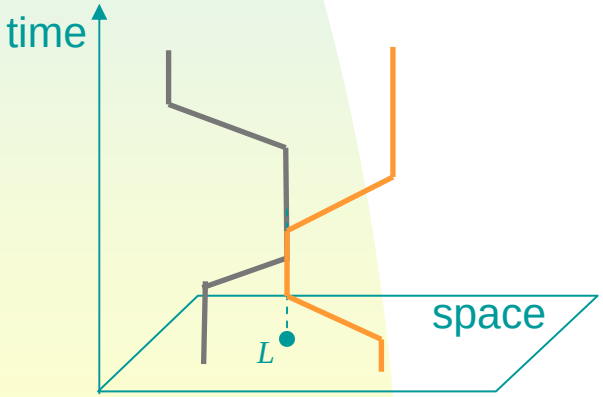
Exploratory spatio-temporal analysis functions:



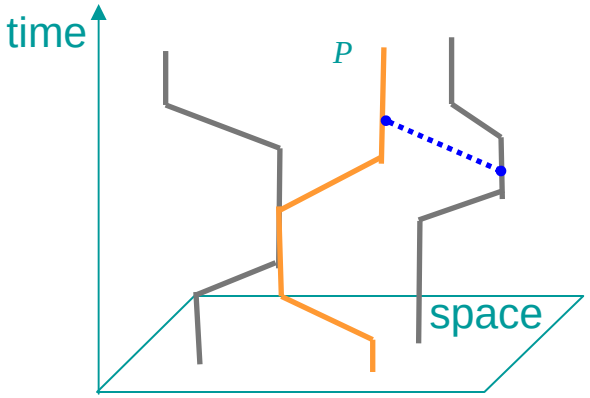
Find locations of ST paths at time *T*



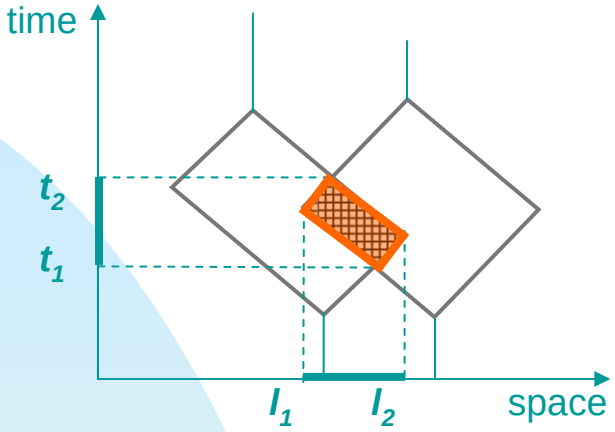
Locate time for point *A* on the ST path



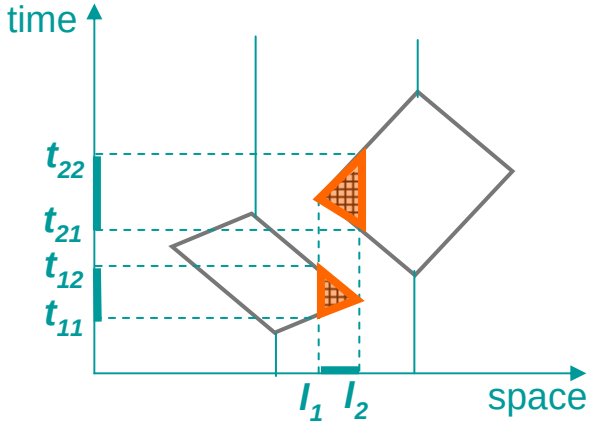
Find ST paths that visited location *L*



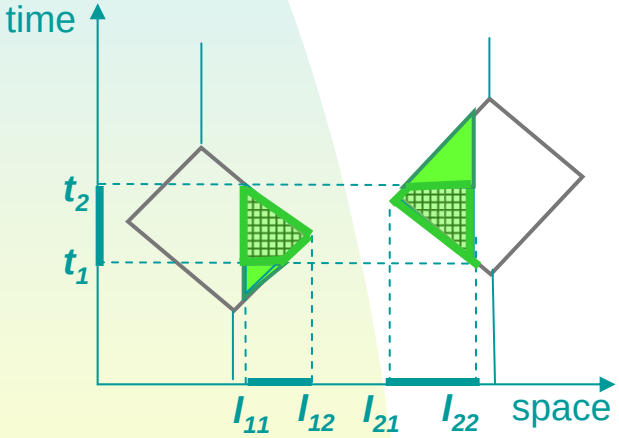
Find ST paths interacting with person *P*



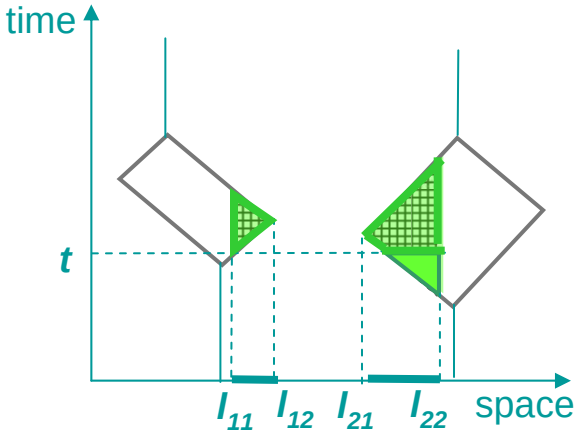
Potential SP interactions



Potential AP interactions



Potential ST interactions



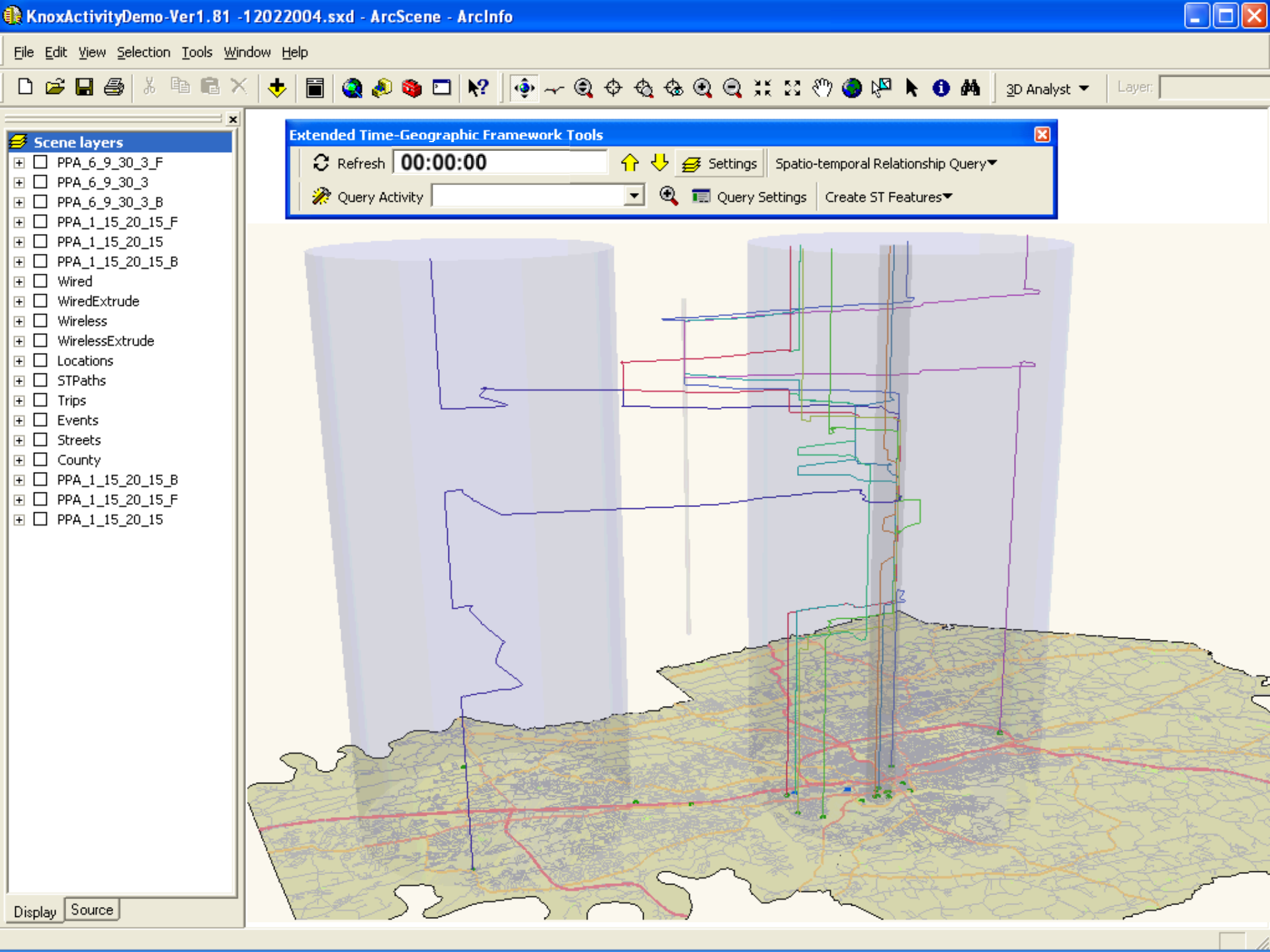
Potential AT interactions

For additional information, please see Yu & Shaw (2008) in *IJGIS*.

What does our Space-Time GIS look like?

Implemented as an ArcGIS extension

with temporal dynamic segmentation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PPA_6_9_30_3_B
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Source
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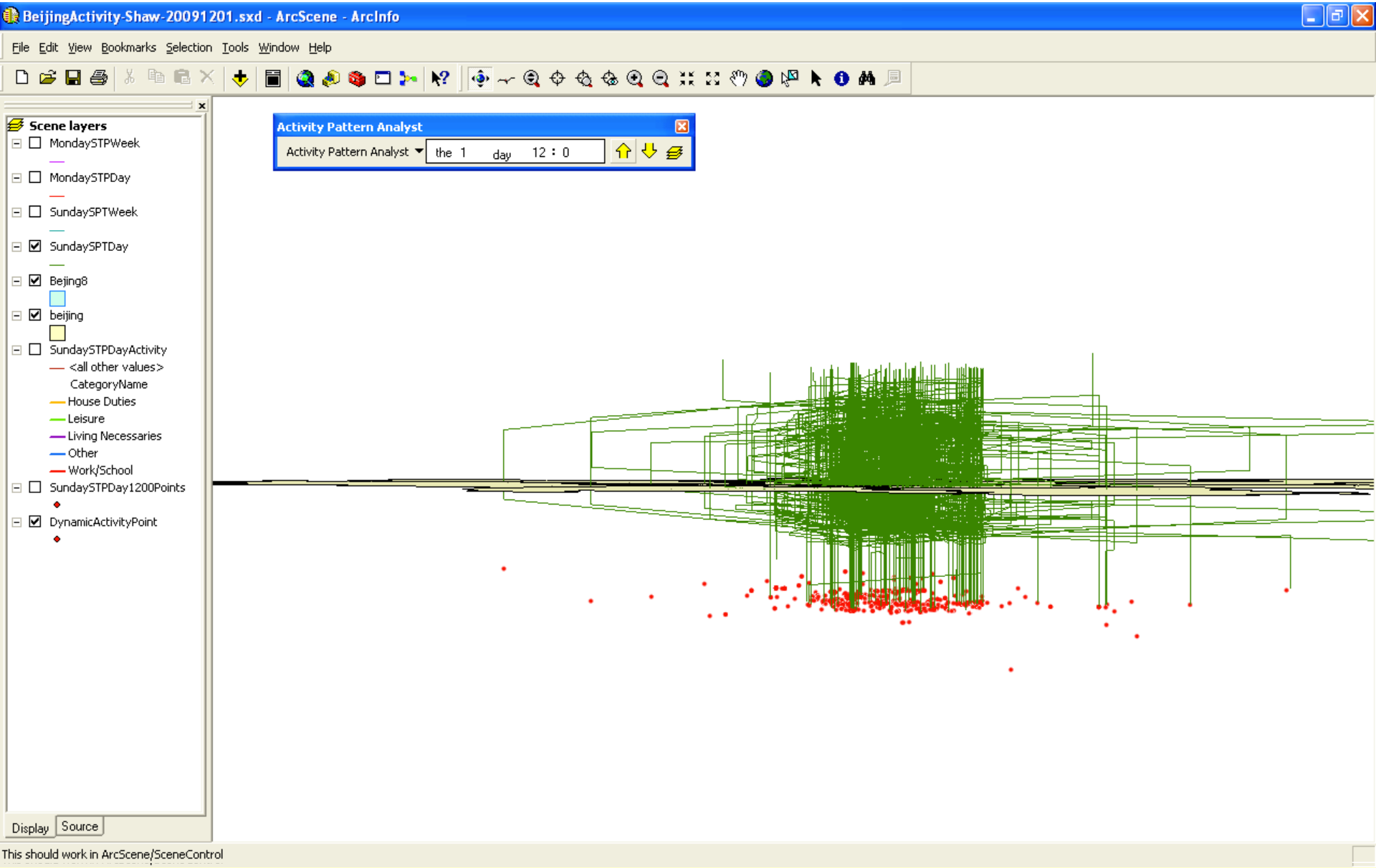
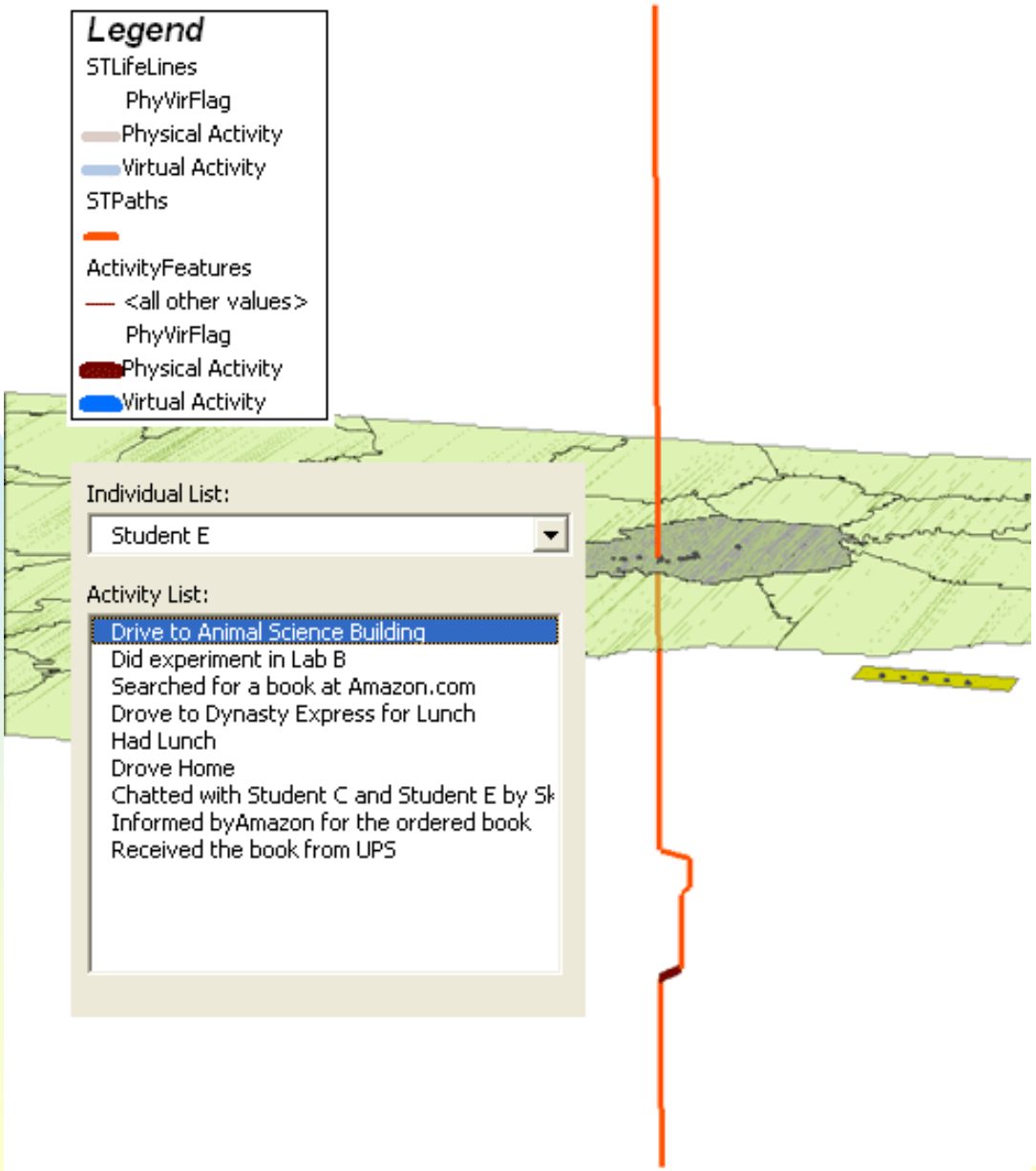
Settings
Spatio-temporal Relationship Query
Query Activity
Query Settings
Create ST Features



Chen, Shaw and others (forthcoming) in *Journal of Transport Geography*.

Shih-Lung Shaw, Department of Geography

THE UNIVERSITY of TENNESSEE KNOXVILLE

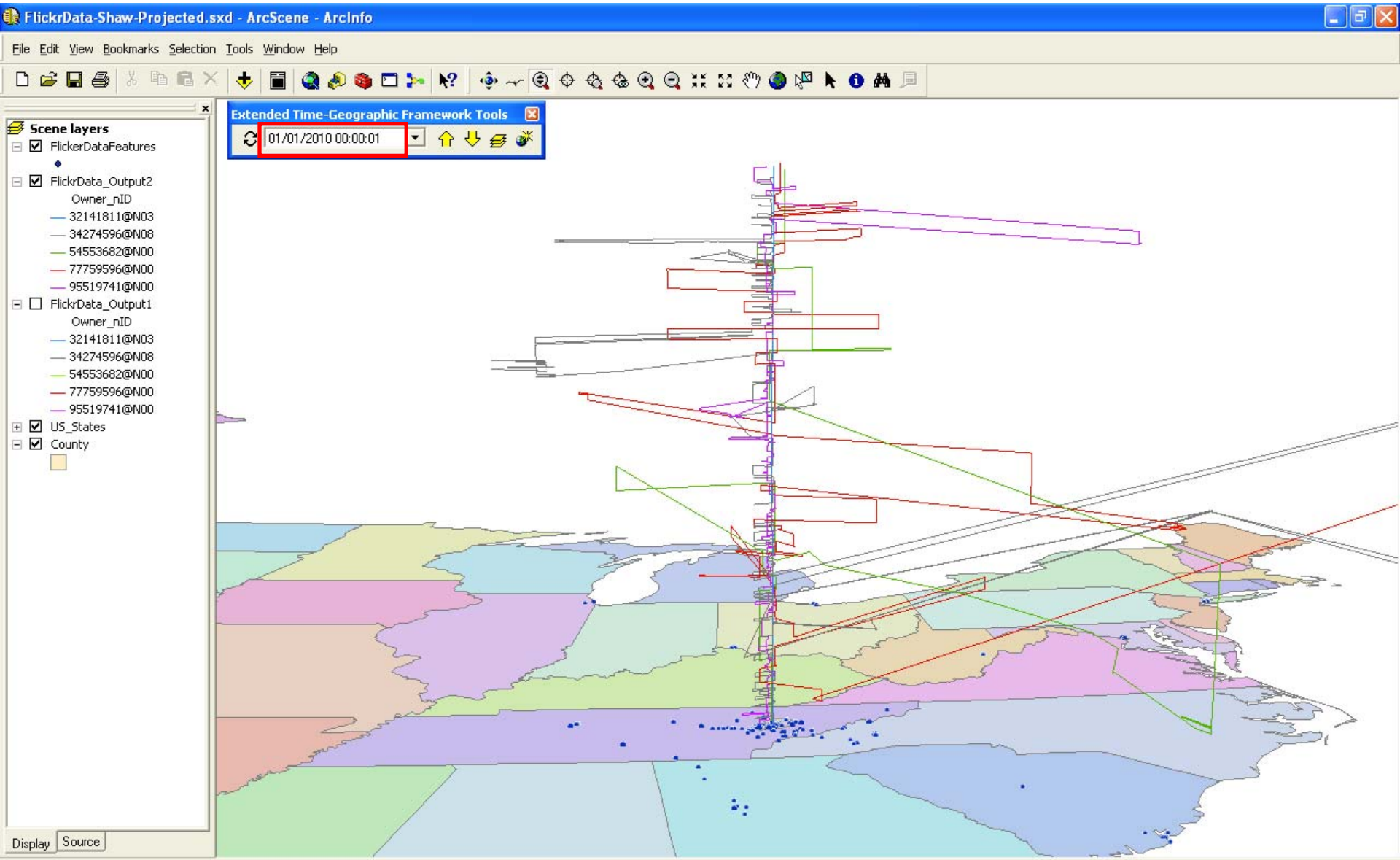


For additional information, please see Shaw & Yu (2009) in *Journal of Transport Geography*.

Flickr Data (I)

Space-Time GIS visualization

Flickr data provided by Sumang (Sam) Liu, Dept. of Geography, Univ. of Tennessee



(Flickr data provided by Sumang Liu, Department of Geography, University of Tennessee, Knoxville)

Shih-Lung Shaw, Department of Geography

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Video of Visualization in Space-Time GIS

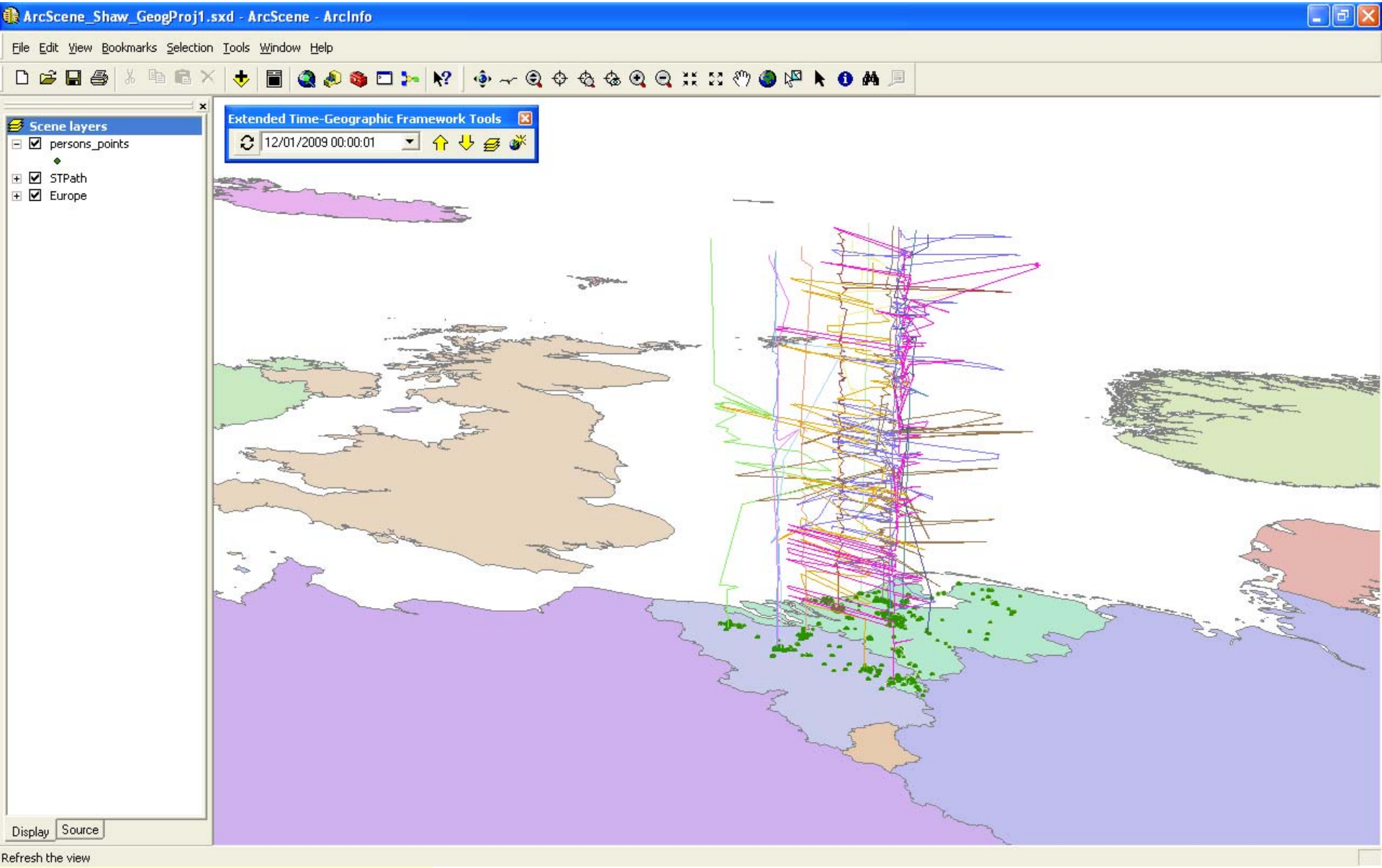
C:\Shaw\New-Conferences\2010 Space-Time Constraints on Scoial Networks\Videos\Flickr_Sam\Flickr_Sam_Video1\Flickr_Sam_Video1_fs.htm

Flickr Data (II)

Space-Time GIS visualization

Flickr data provided by Dongpo Deng, ITC/Univ. of Twente, The Netherlands

deng@itc.nl



(Flickr data provided by Dongpo Deng, Dept. of Geo-Processing, ITC/Univ. of Twente, The Netherlands)

Shih-Lung Shaw, Department of Geography

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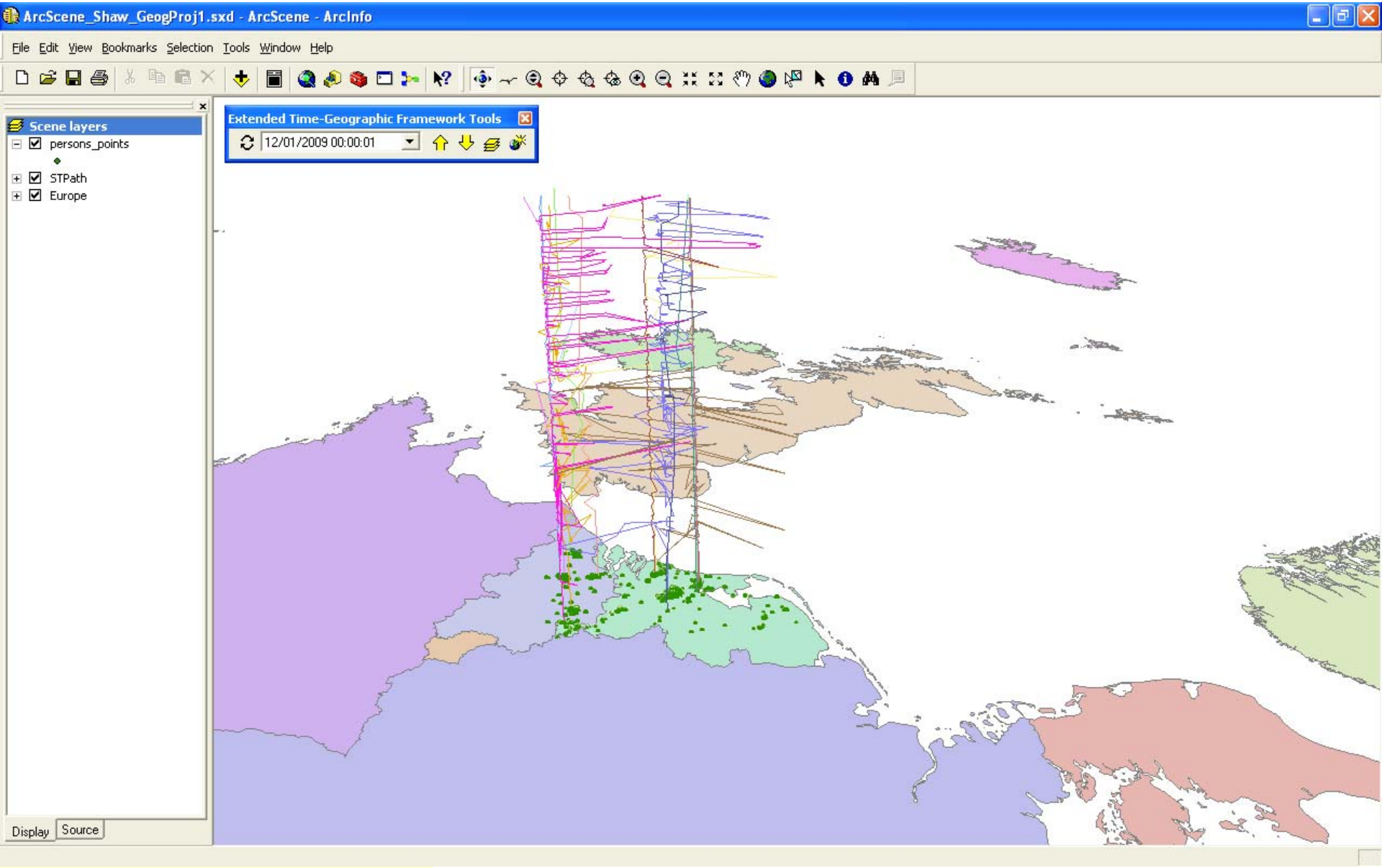

(Flickr data provided by Dongpo Deng, Dept. of Geo-Processing, ITC/Univ. of Twente, The Netherlands)

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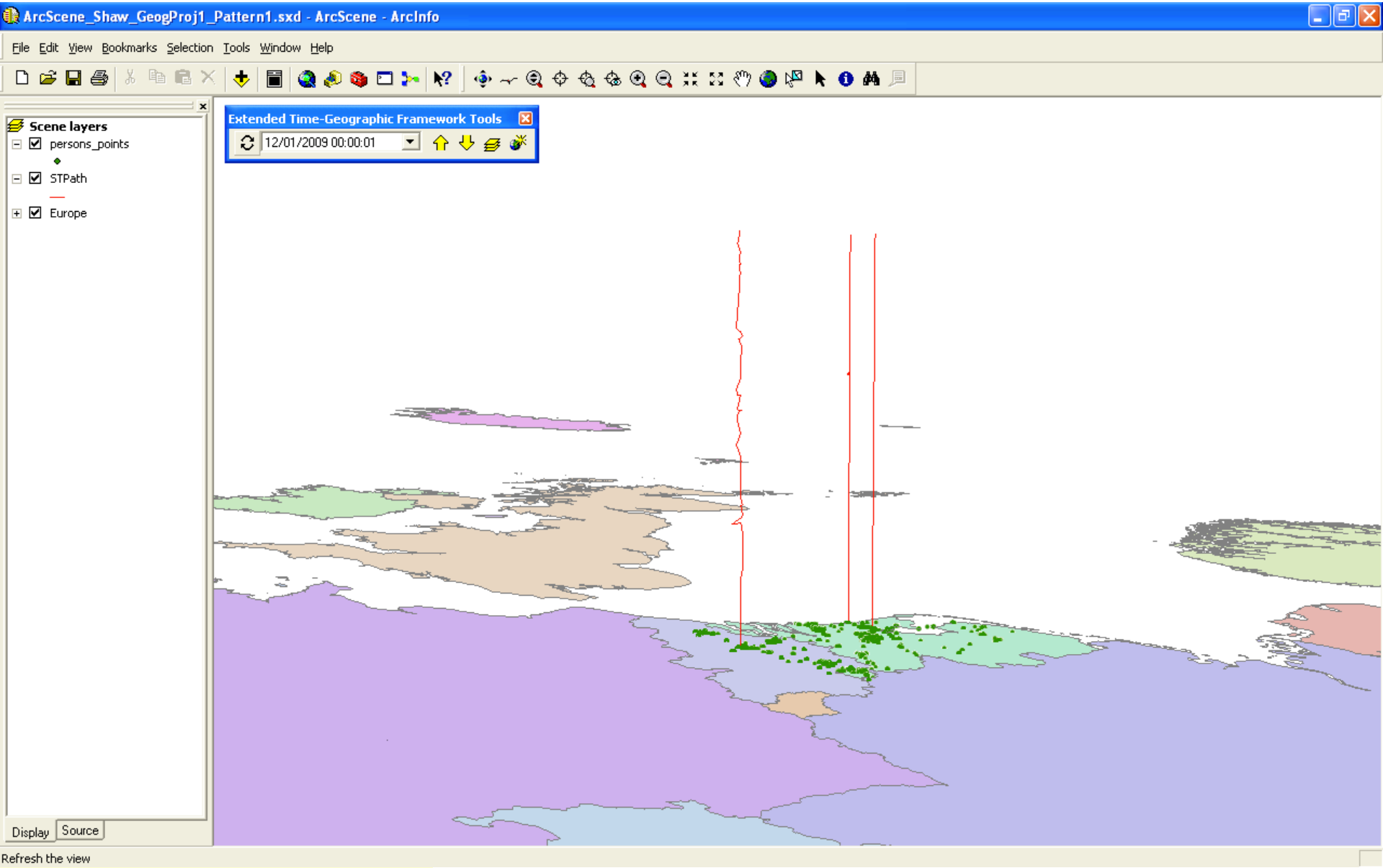

(Flickr data provided by Dongpo Deng, Dept. of Geo-Processing, ITC/Univ. of Twente, The Netherlands)

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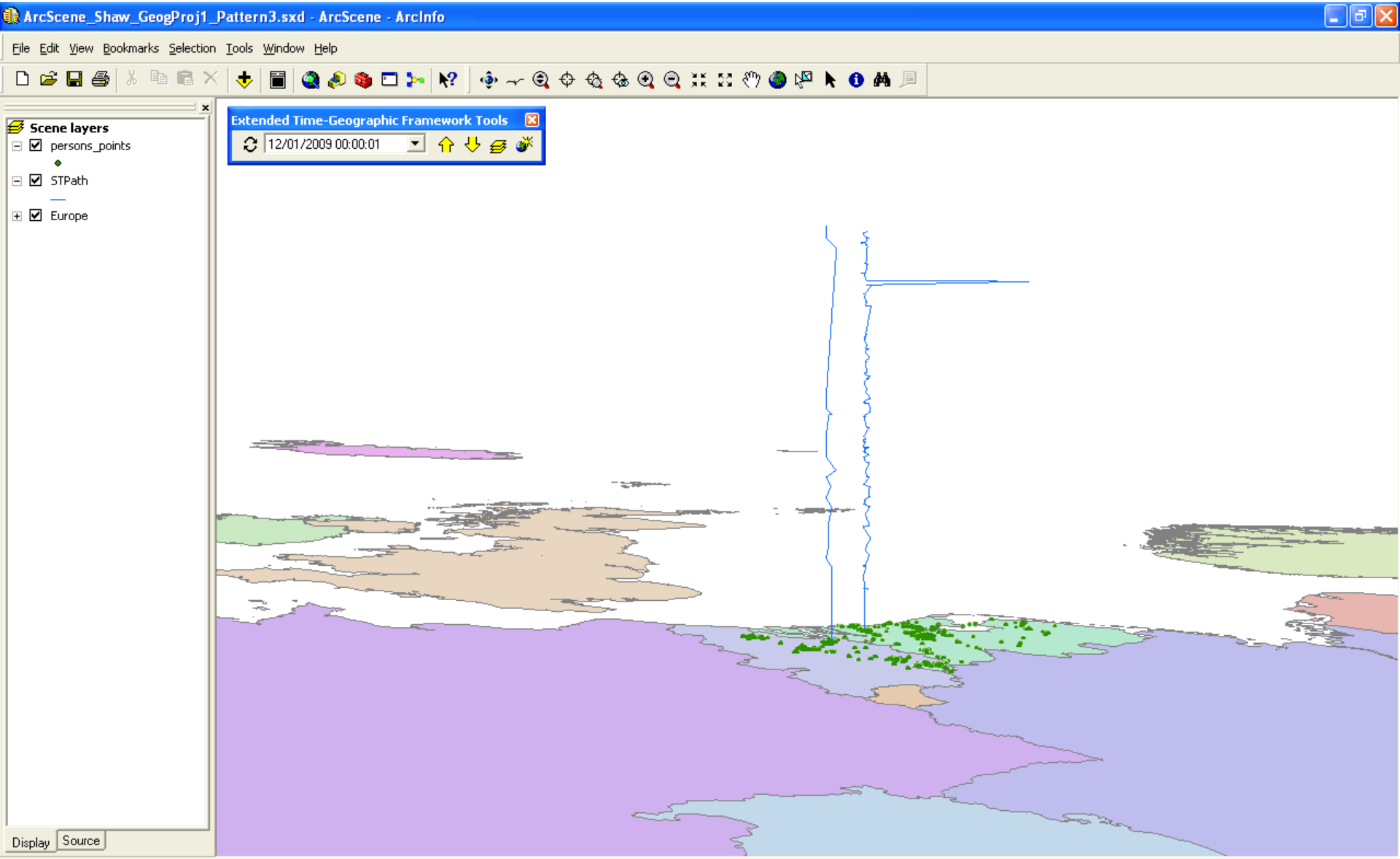
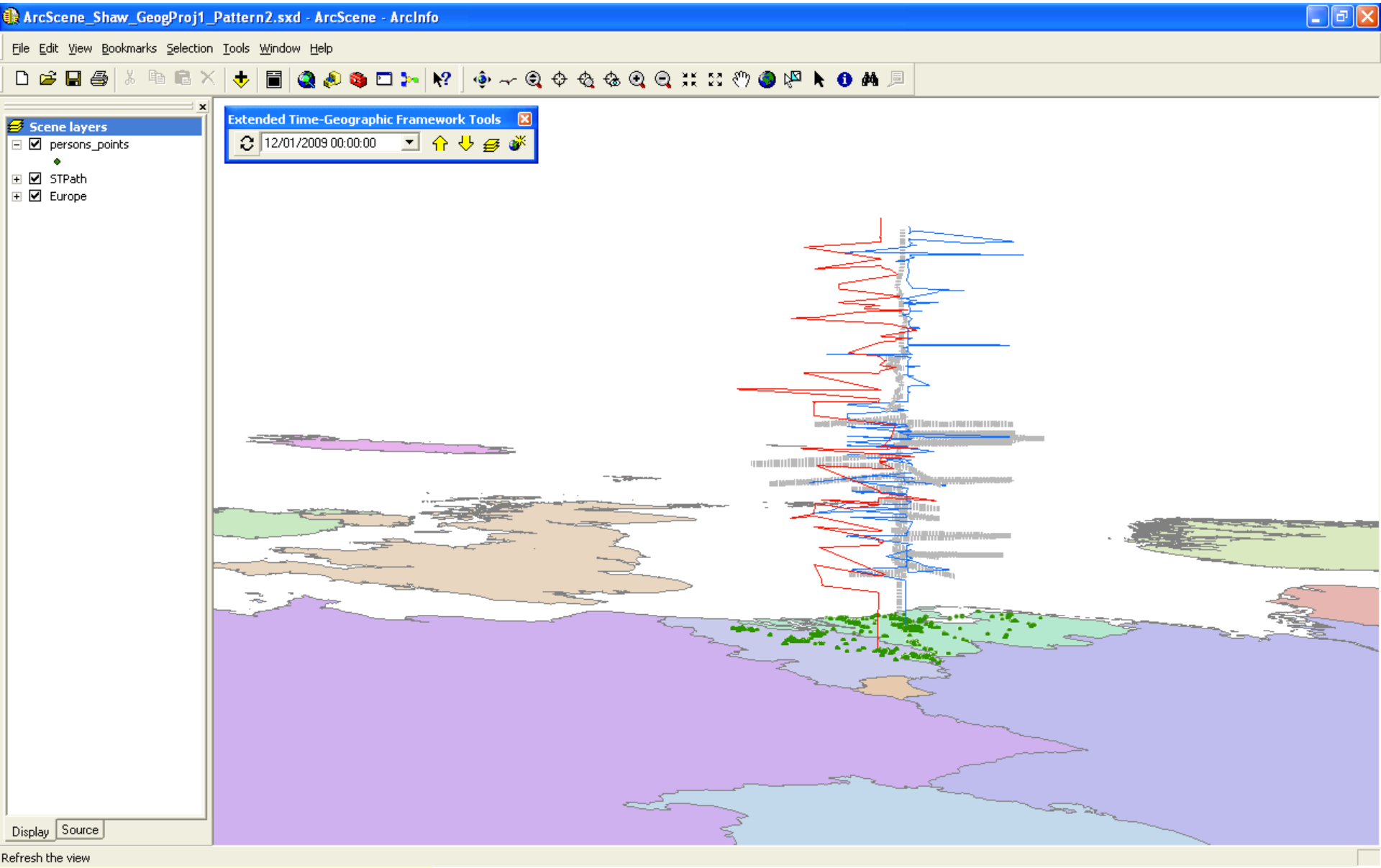
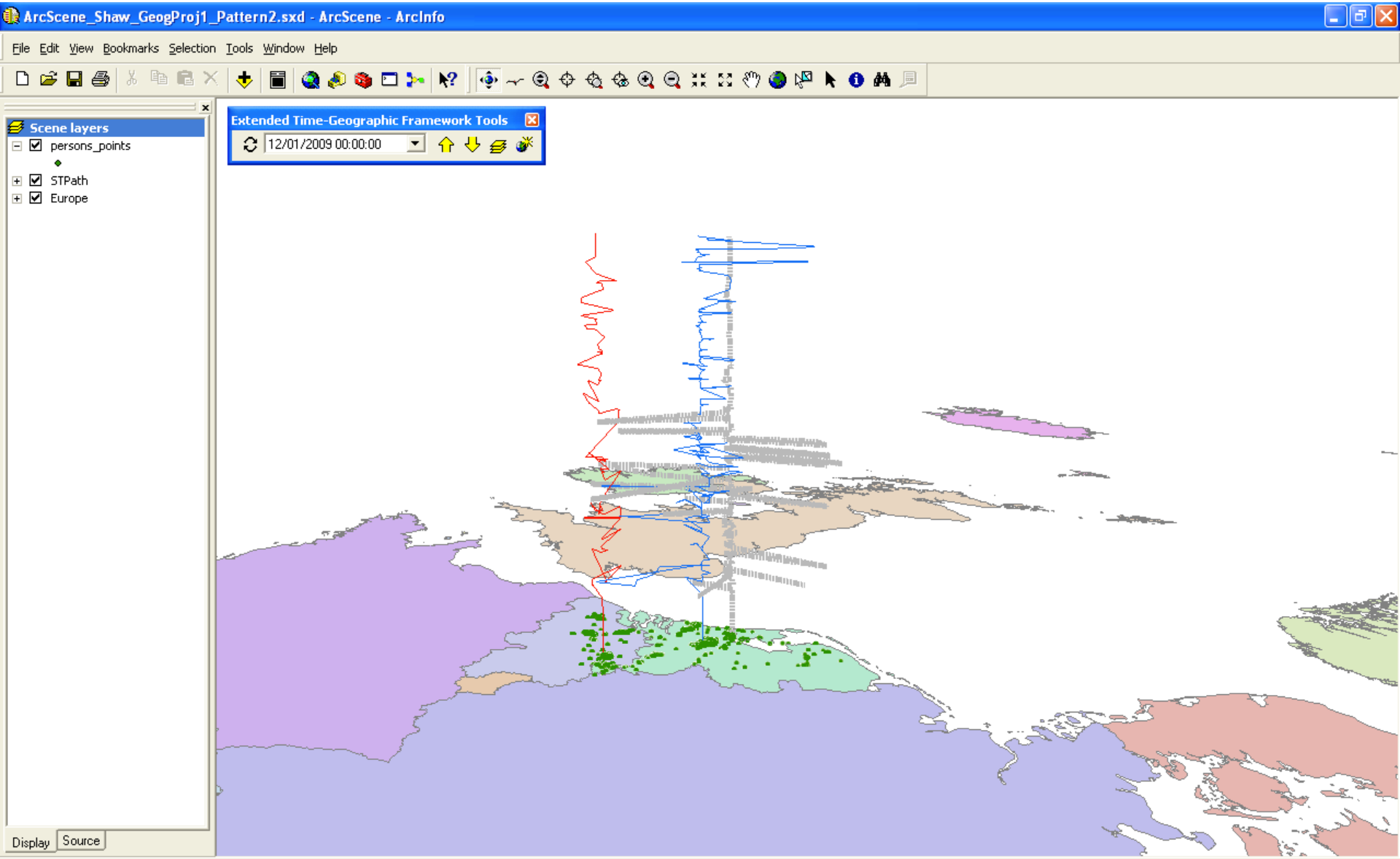


(Flickr data provided by Dongpo Deng, Dept. of Geo-Processing, ITC/Univ. of Twente, The Netherlands)



(Flickr data provided by Dongpo Deng, Dept. of Geo-Processing, ITC/Univ. of Twente, The Netherlands)



(Flickr data provided by Dongpo Deng, Dept. of Geo-Processing, ITC/Univ. of Twente, The Netherlands)

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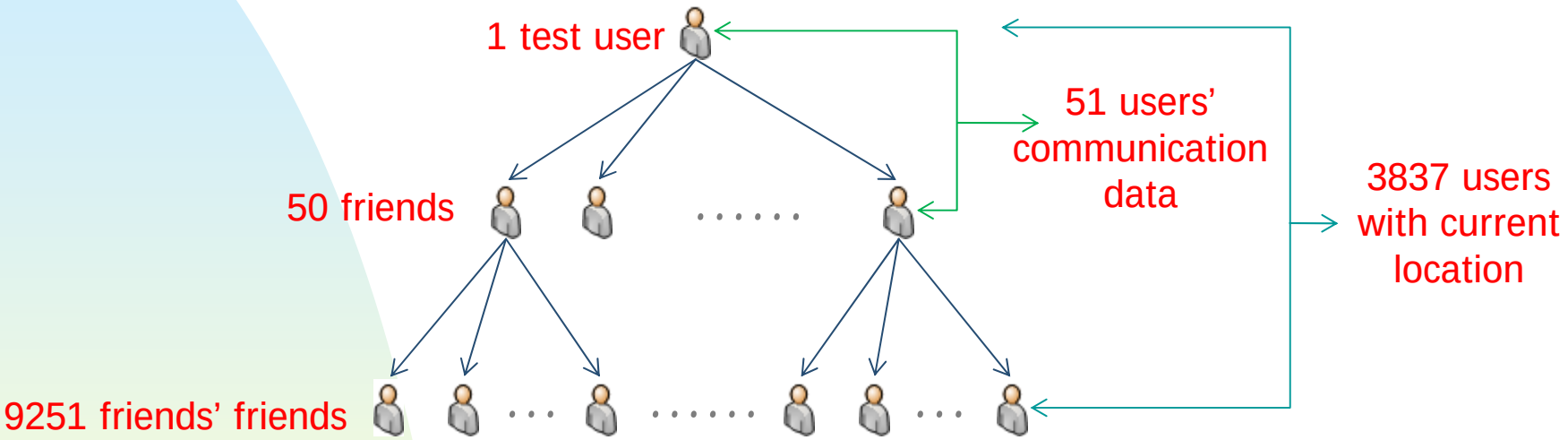
Facebook Data

Space-Time GIS visualization

Facebook data provided by Ling Yin,

Dept. of Geography, Univ. of Tennessee

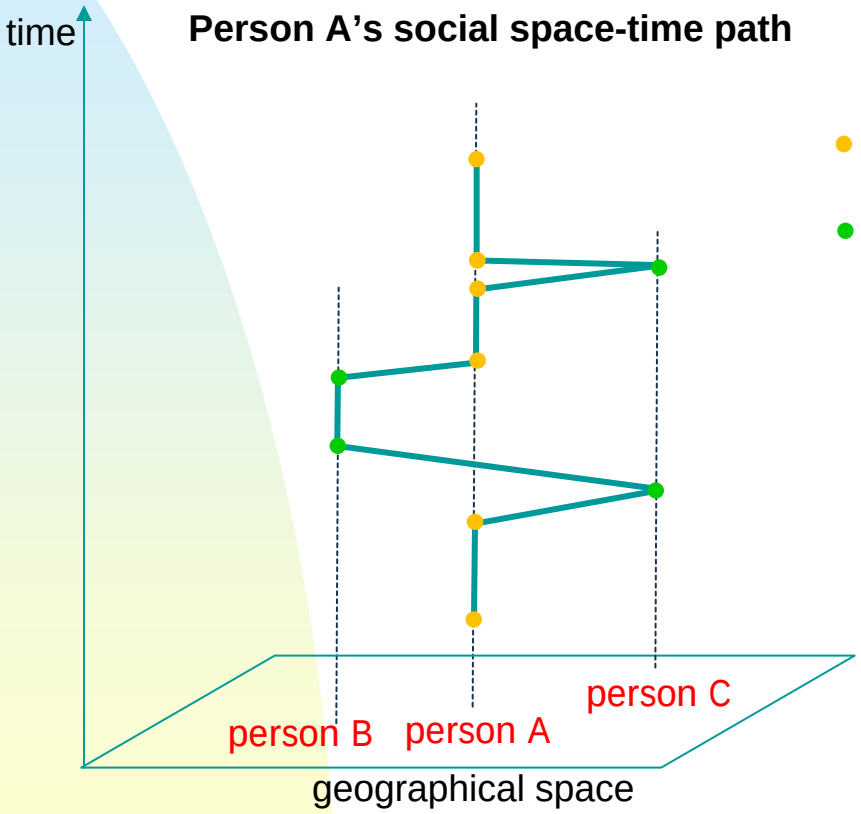
Database



Time span: January 2006 - Nov 25, 2010

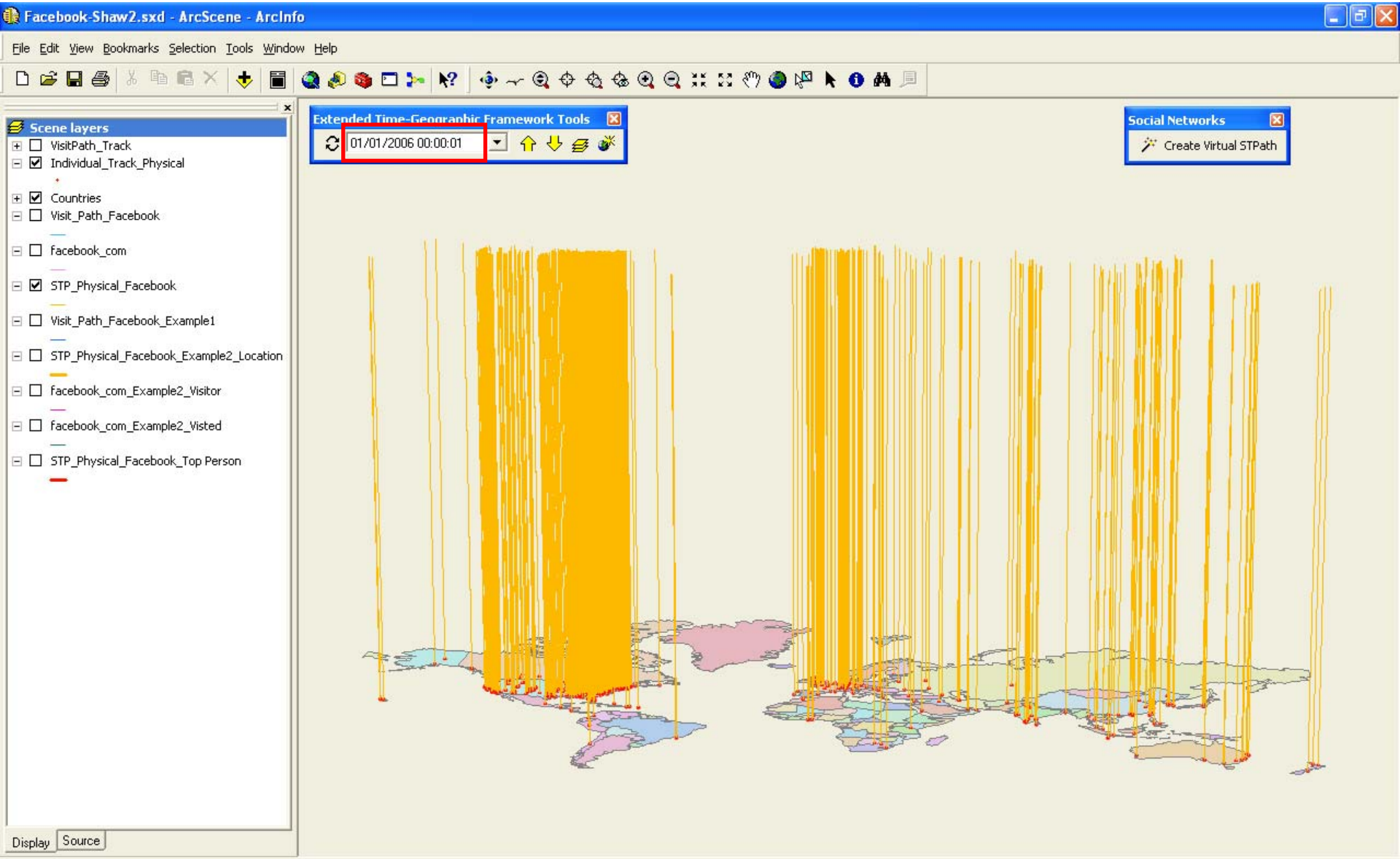
(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

Social Space-Time Path: movement in a physical-virtual hybrid space



- Post or comment on his/her own wall
- Post or comment on friends' walls

(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville)

Shih-Lung Shaw, Department of Geography

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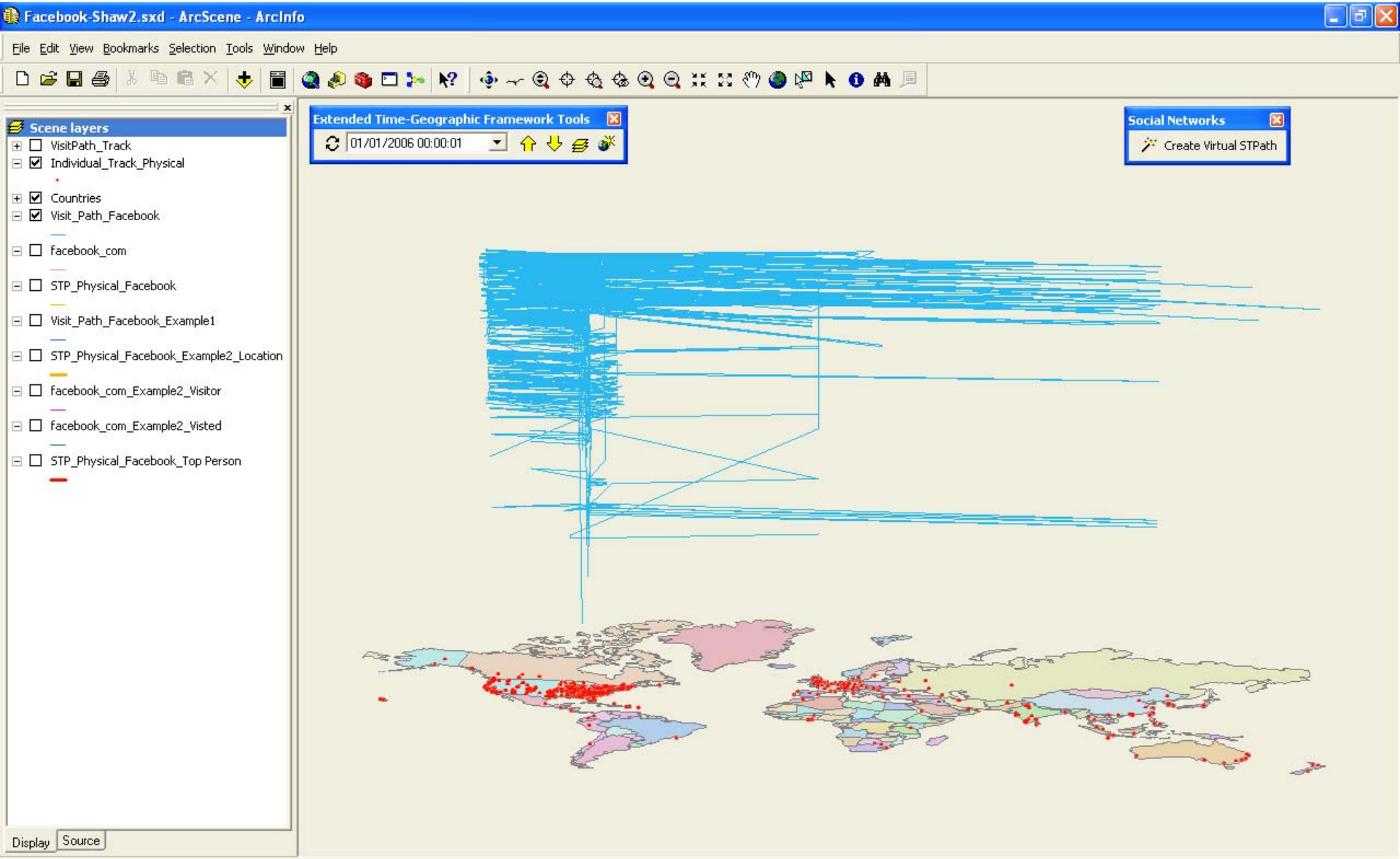

(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville)

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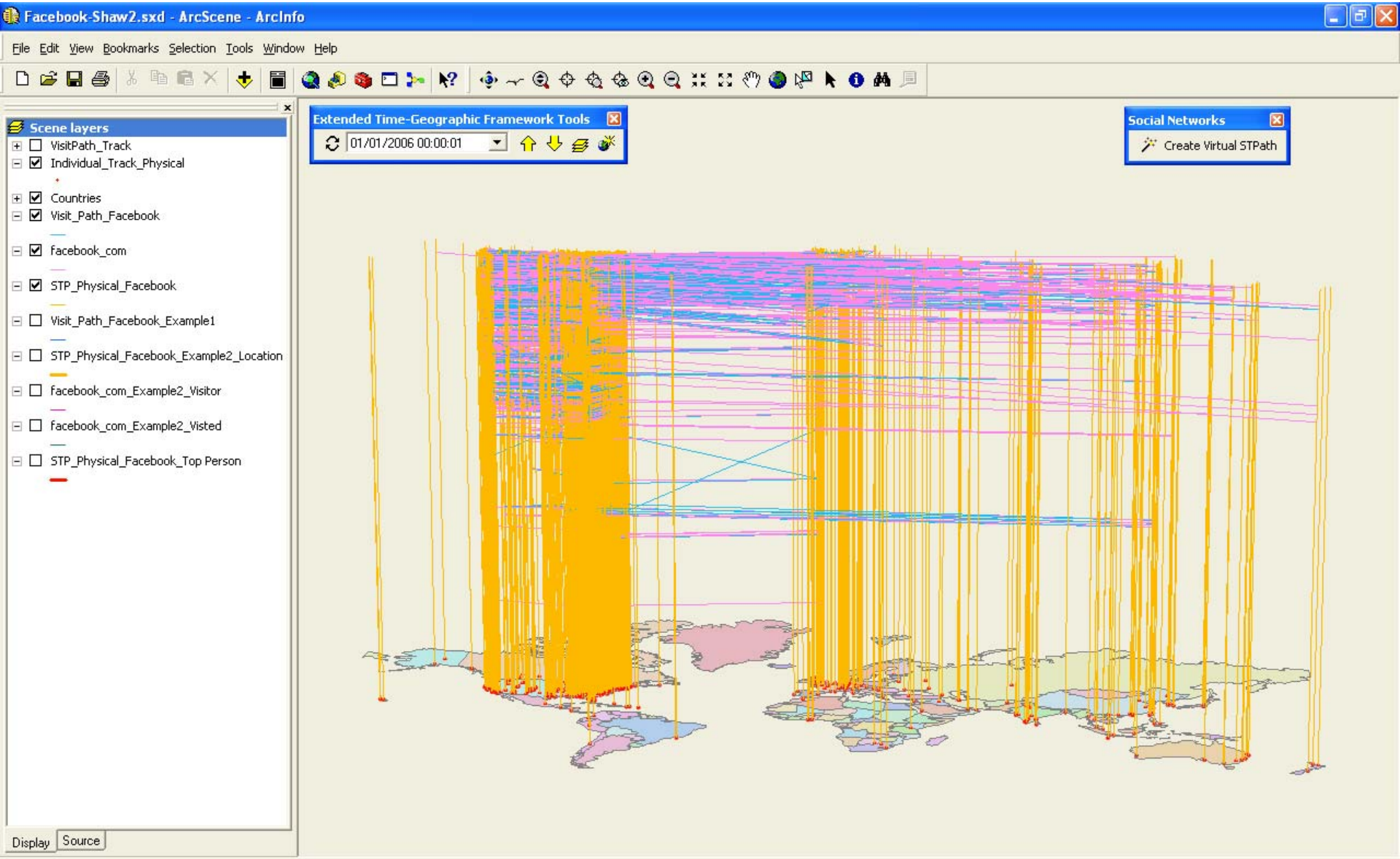

(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville)

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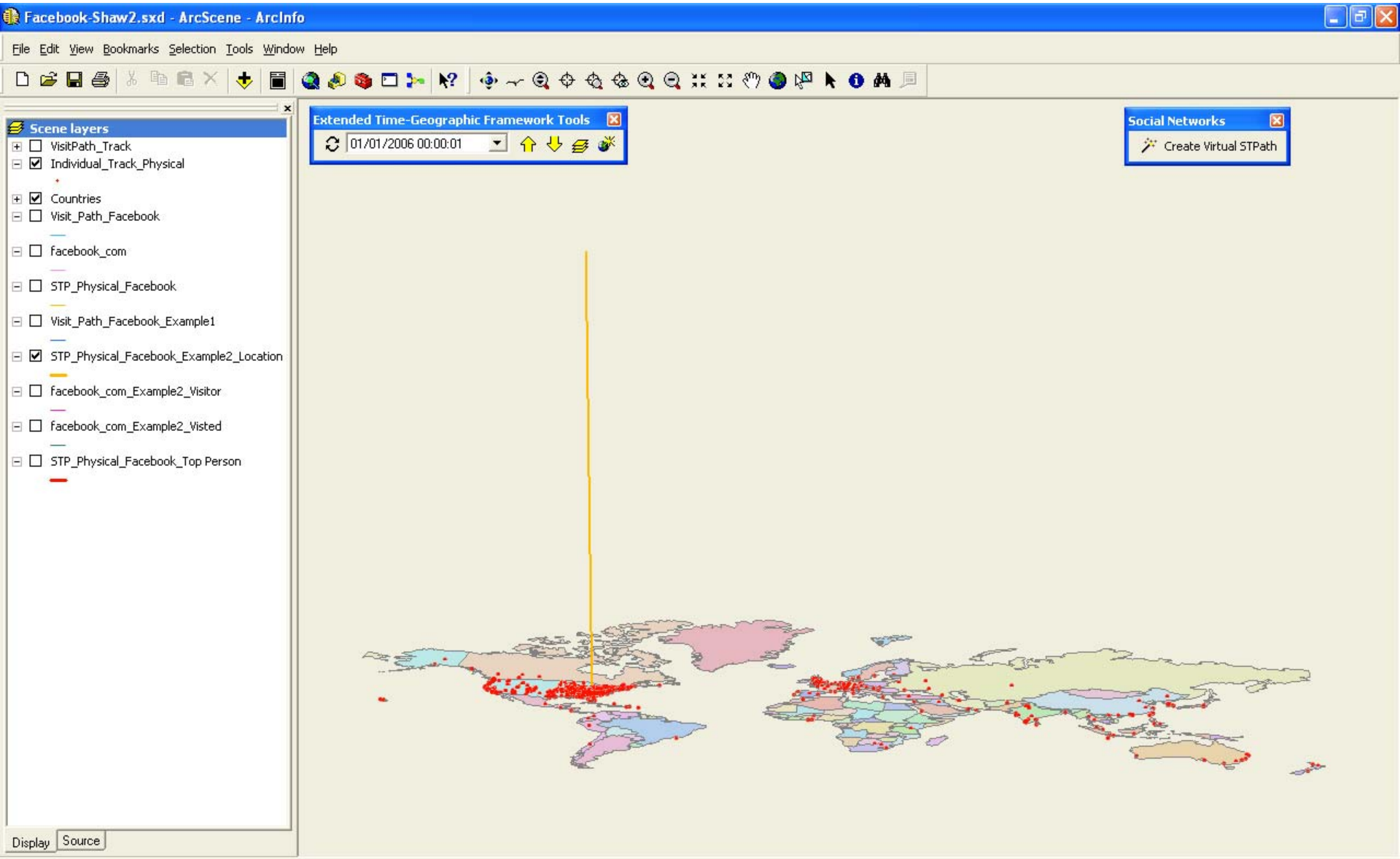

(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville)

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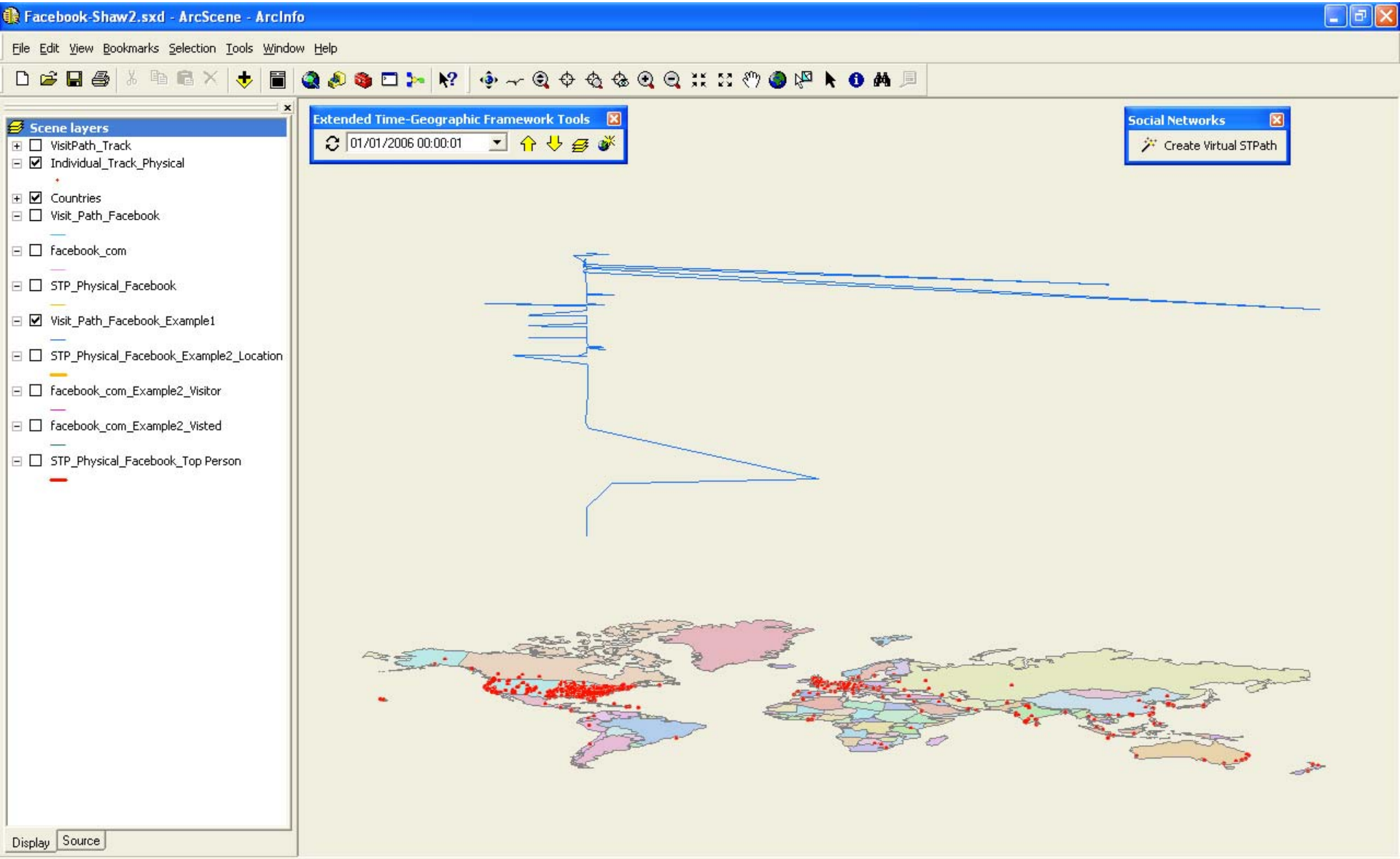

(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville)

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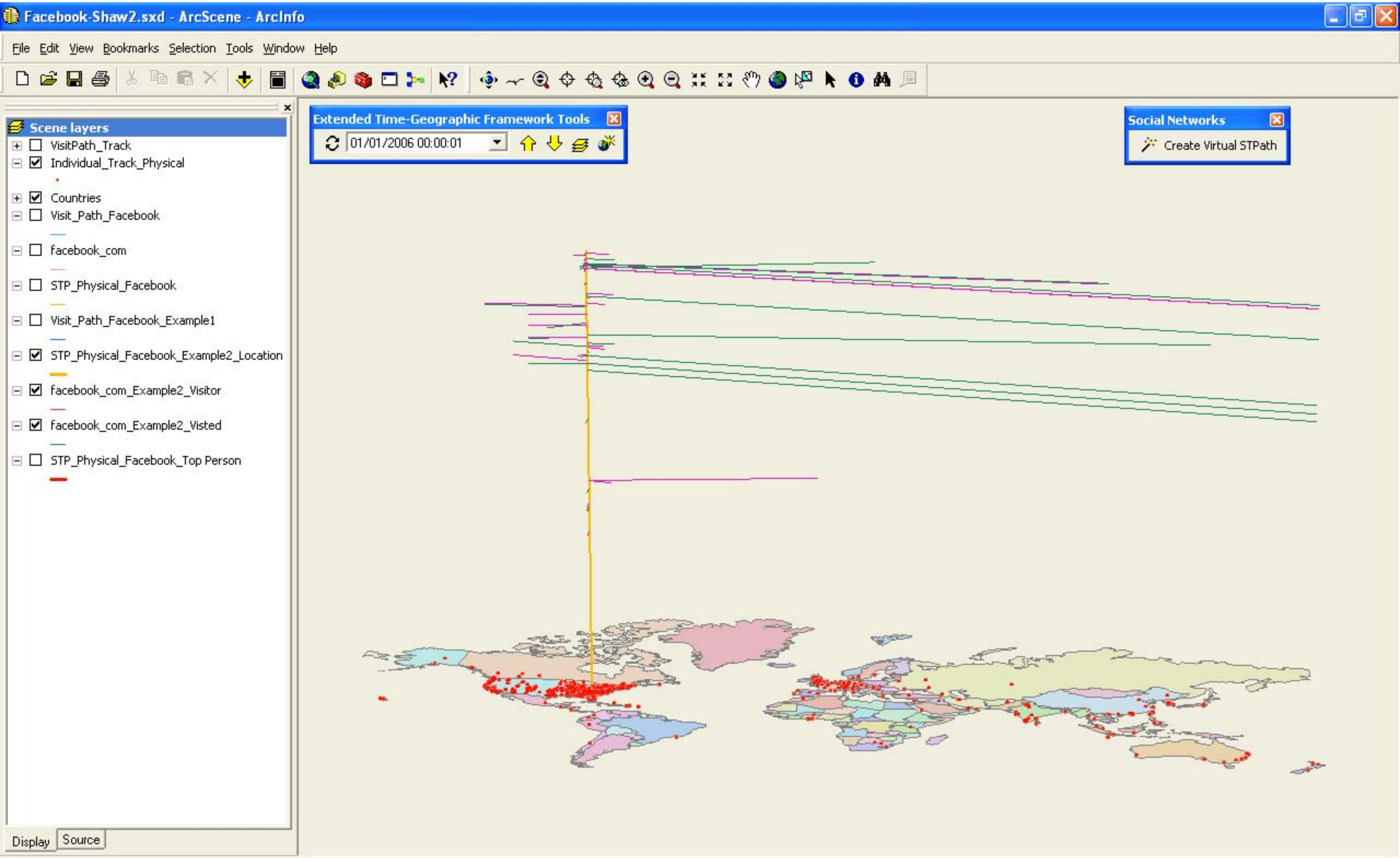

(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville)

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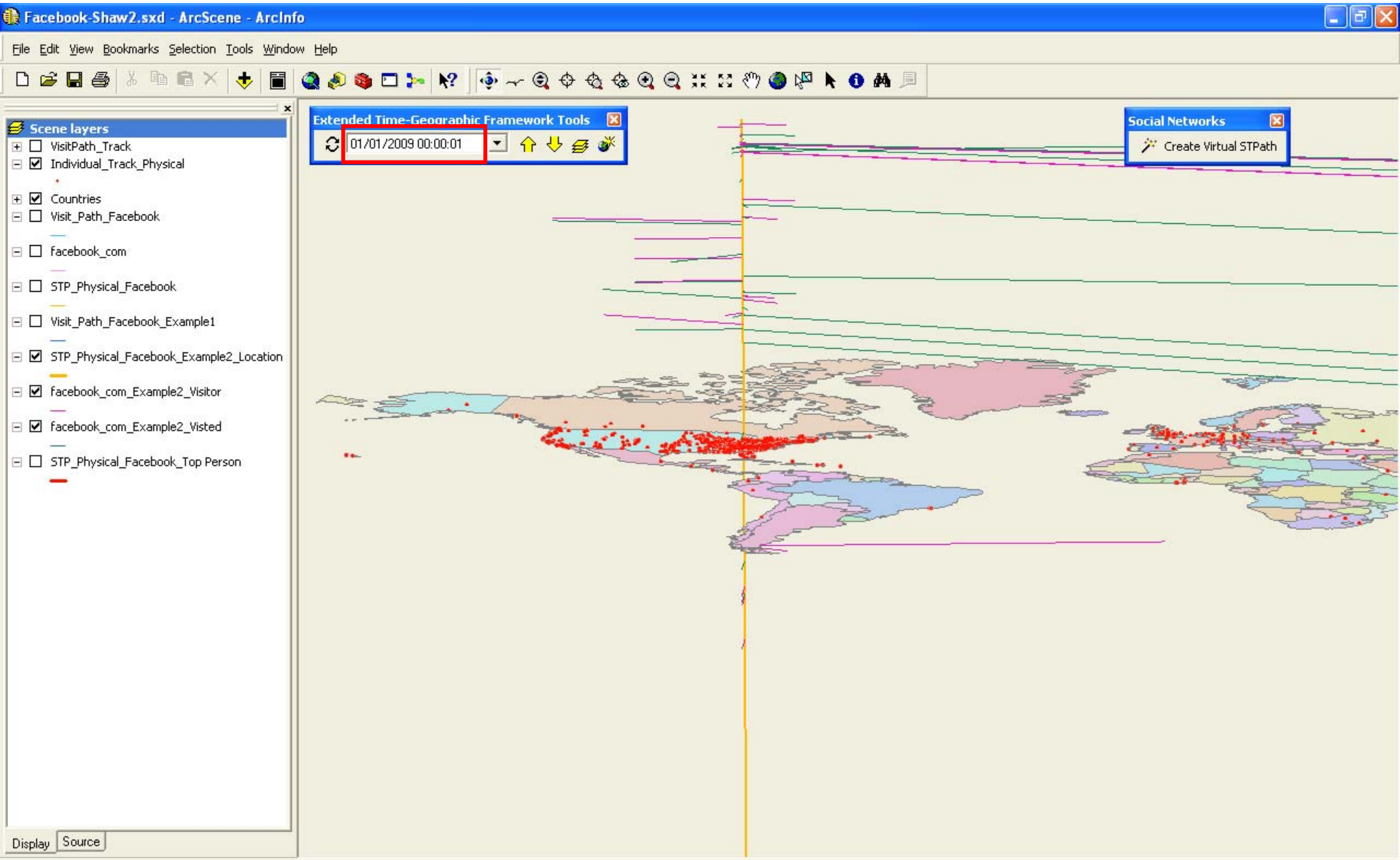

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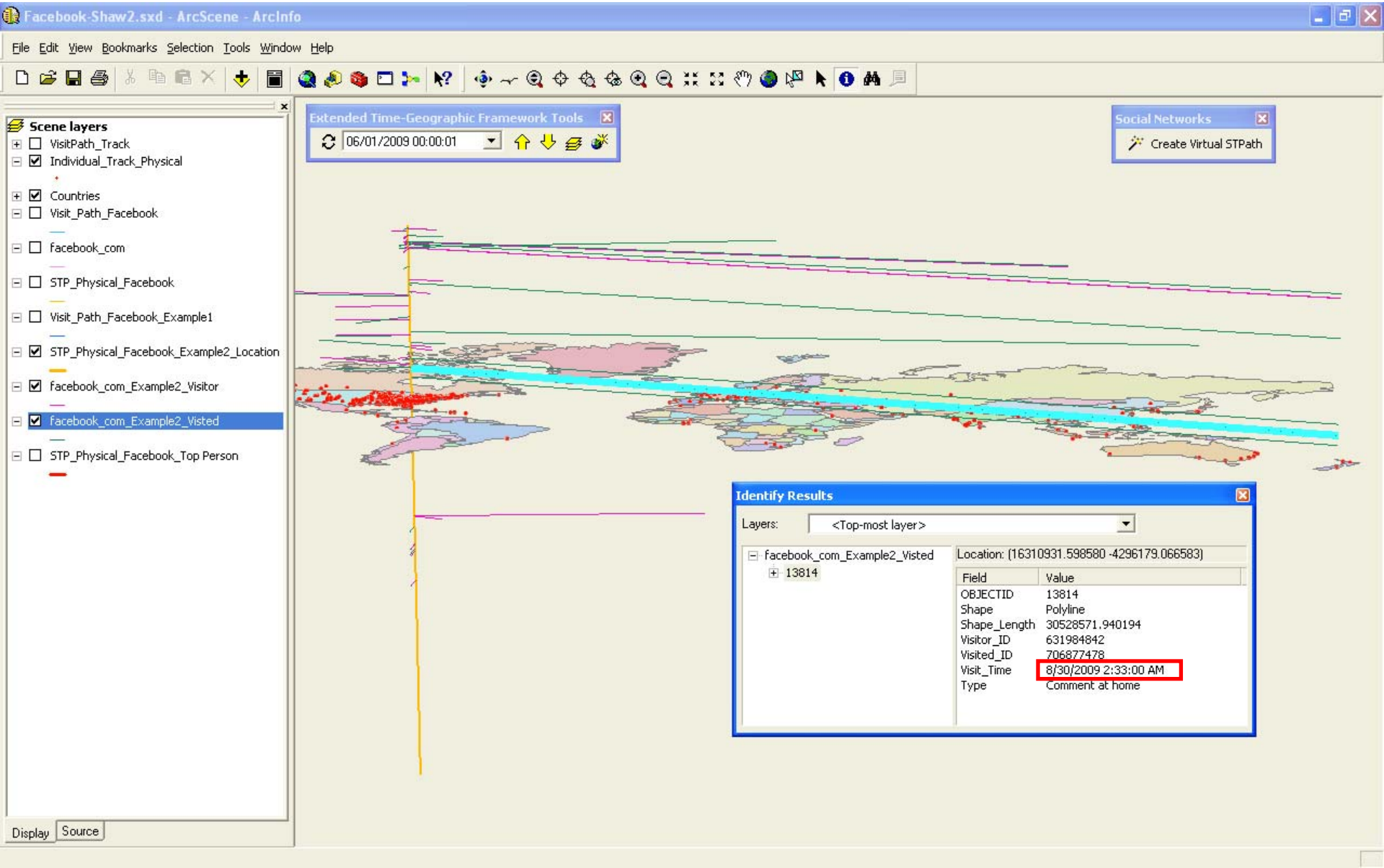

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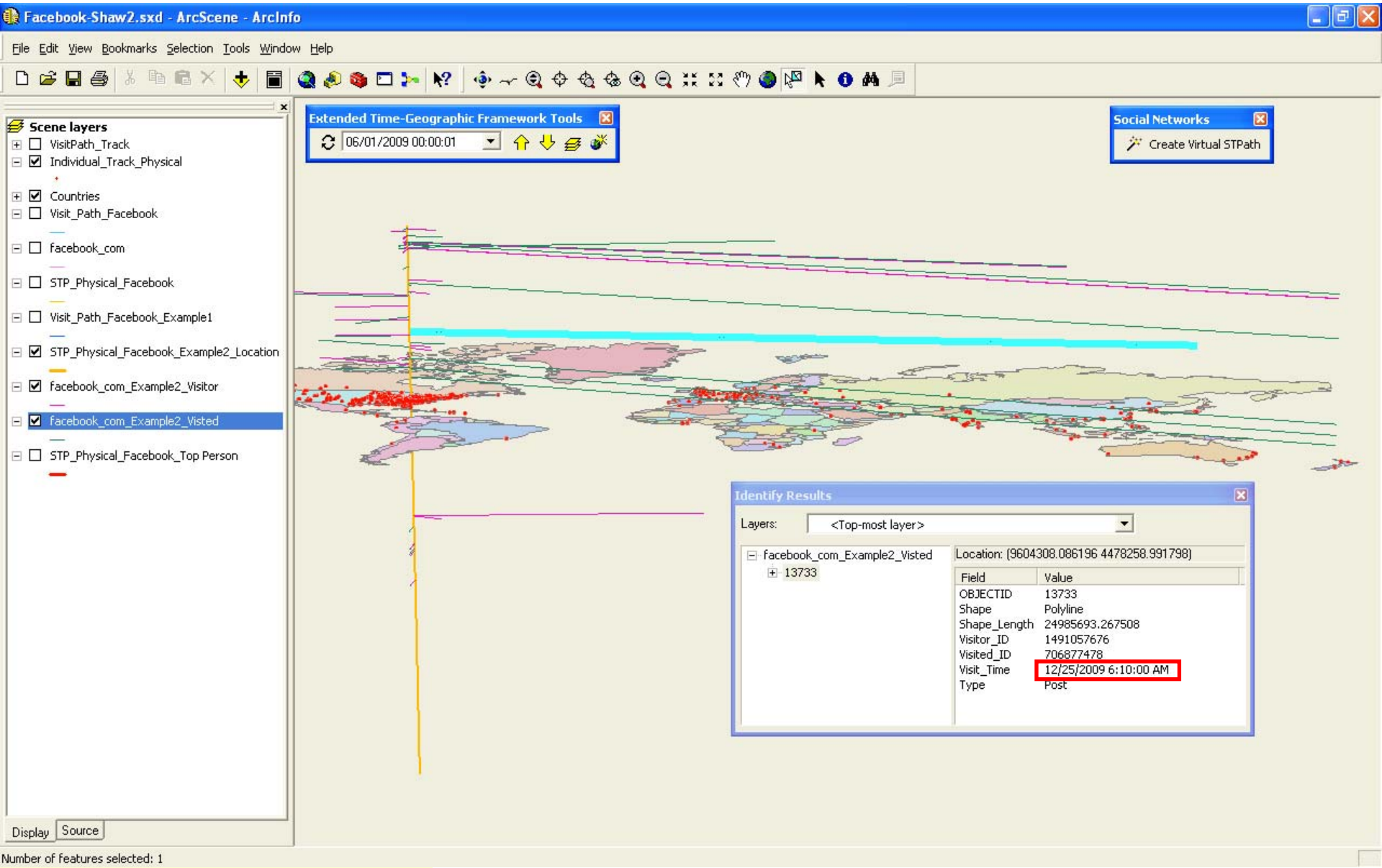

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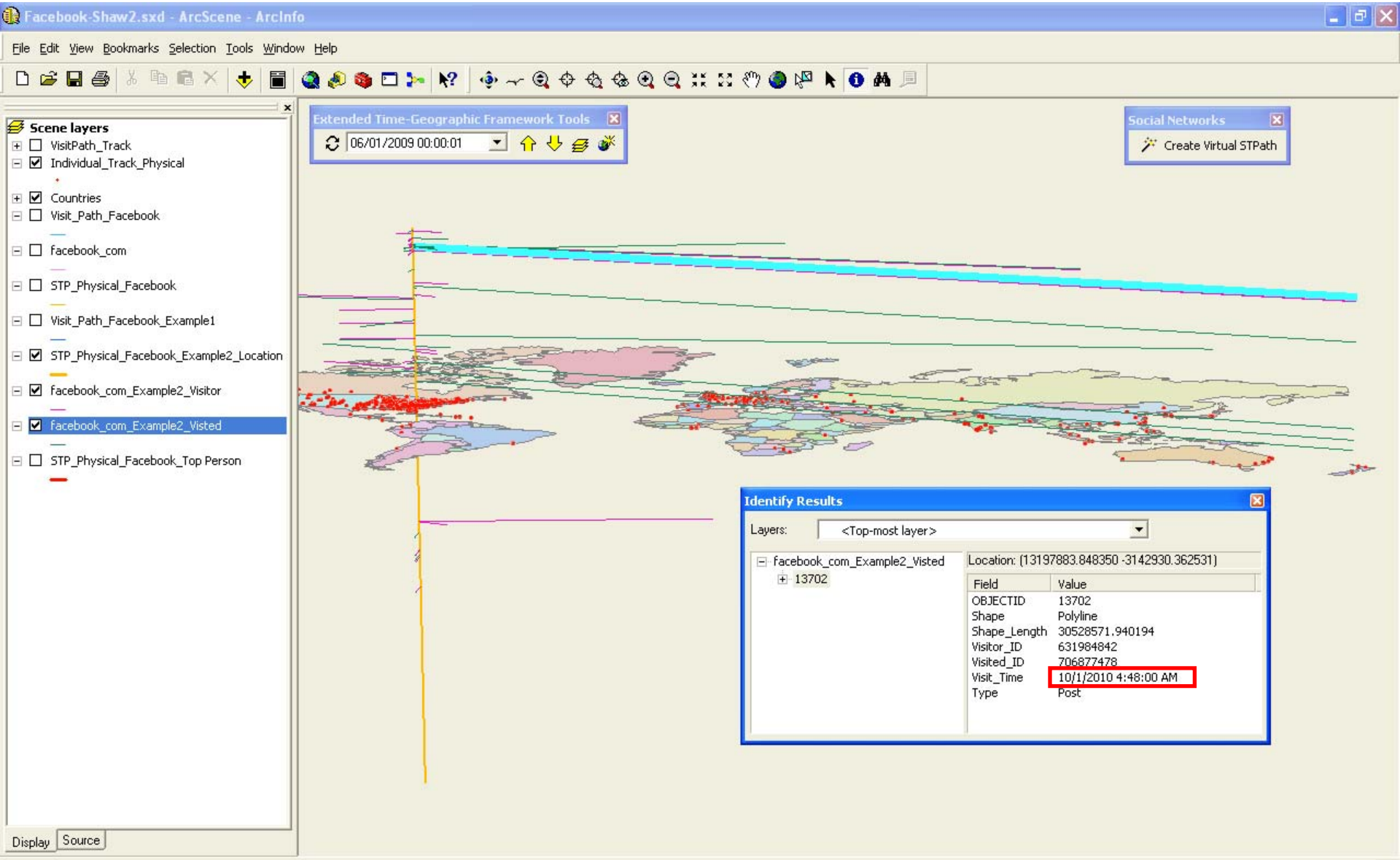

(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville)

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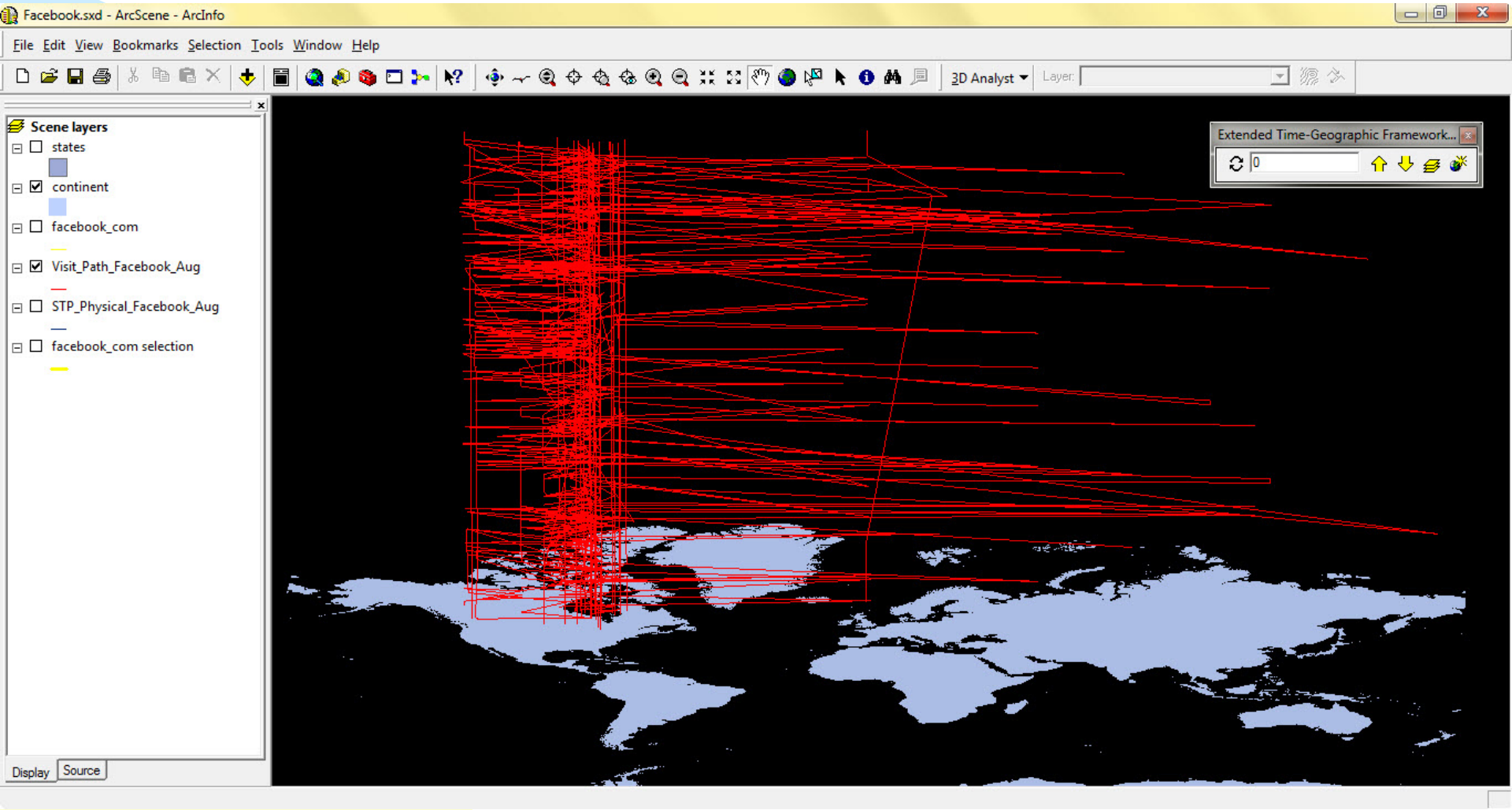
Facebook Data

Space-Time Patterns Clustering Analysis

Space-Time Patterns



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

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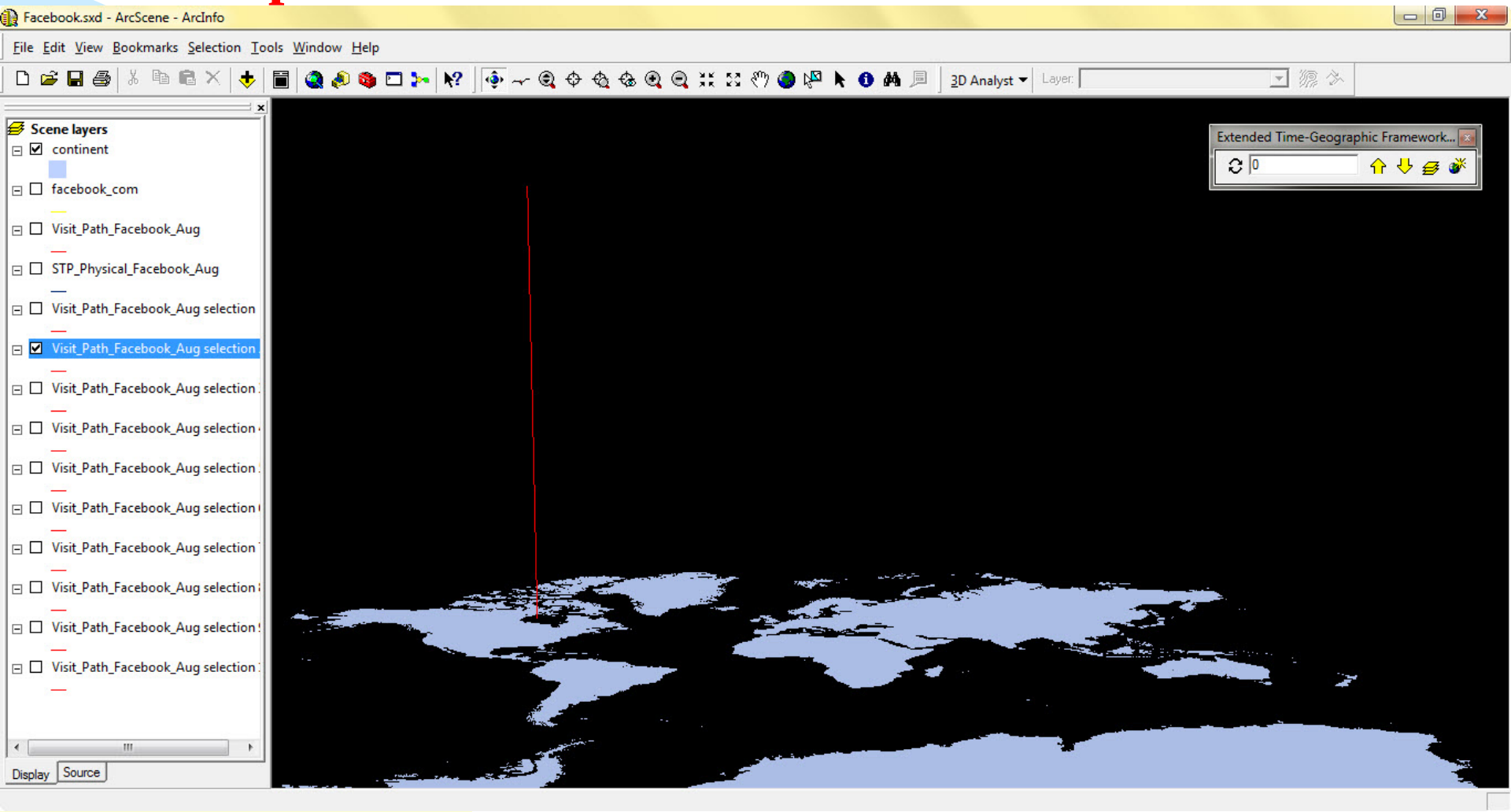
Group 1:
Never posted or commented on friends' walls



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

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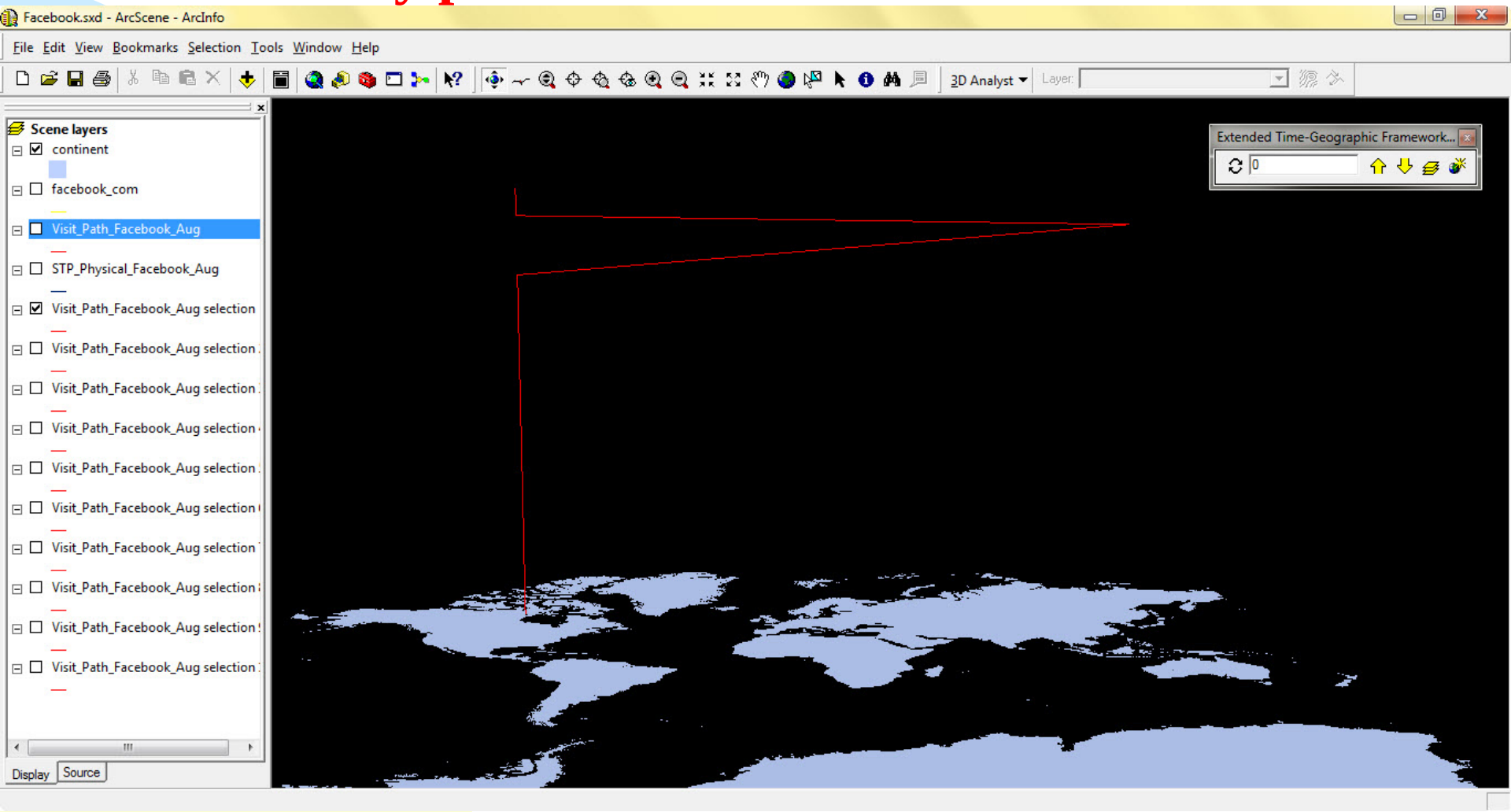
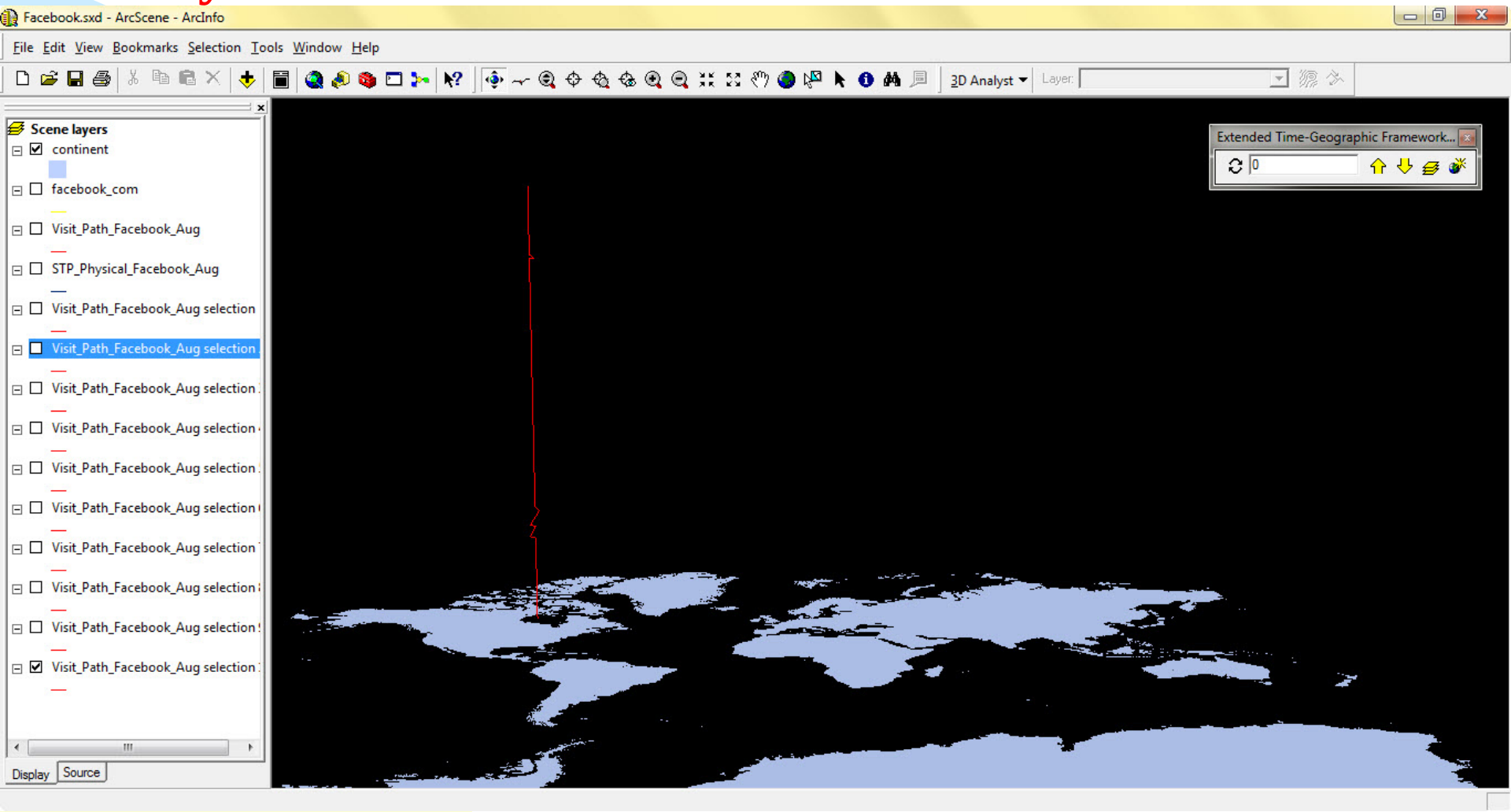
Group 2:
Occasionally posted or commented on friends' walls



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

Group 3:
Only visited local friends



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

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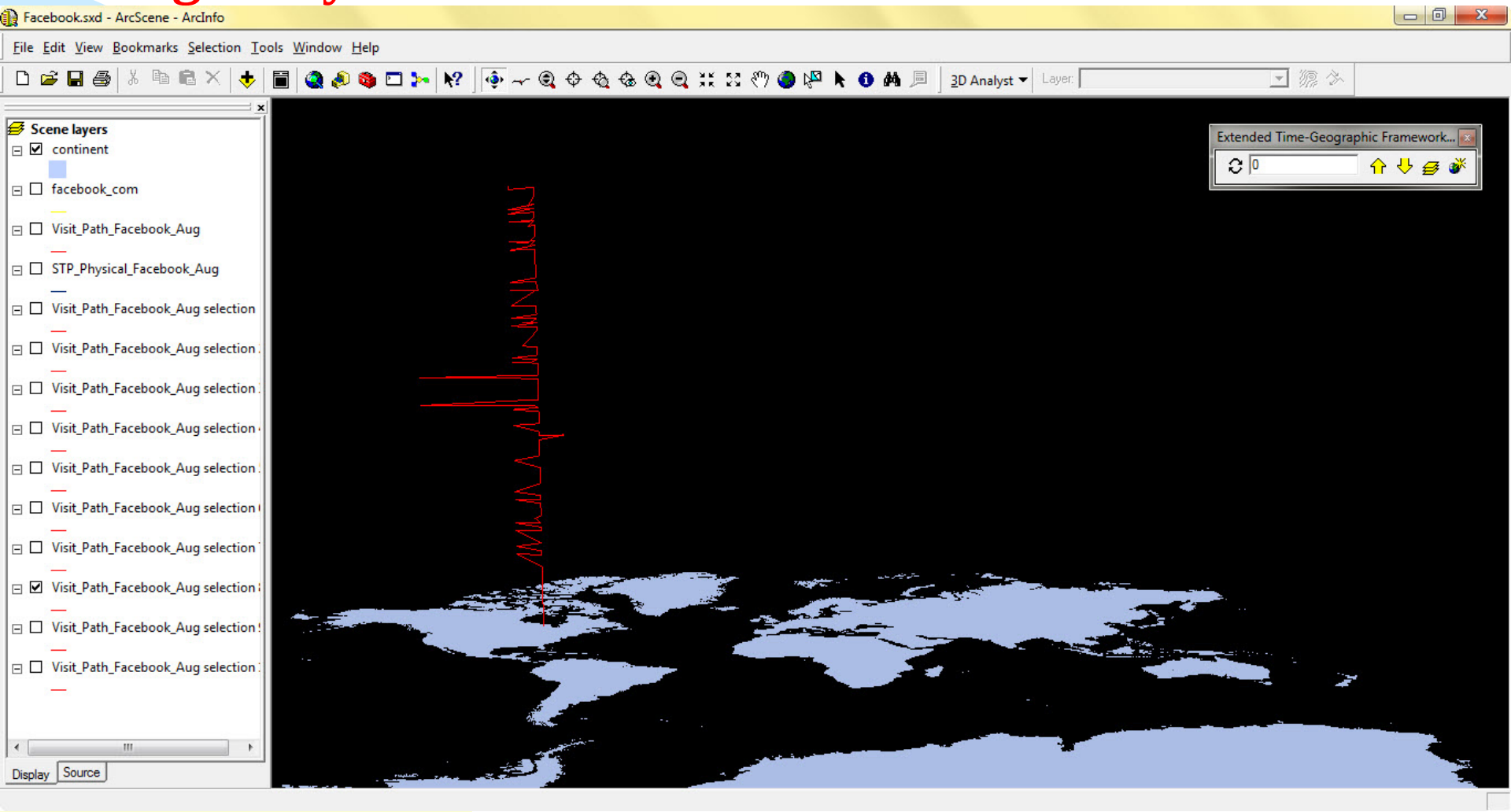
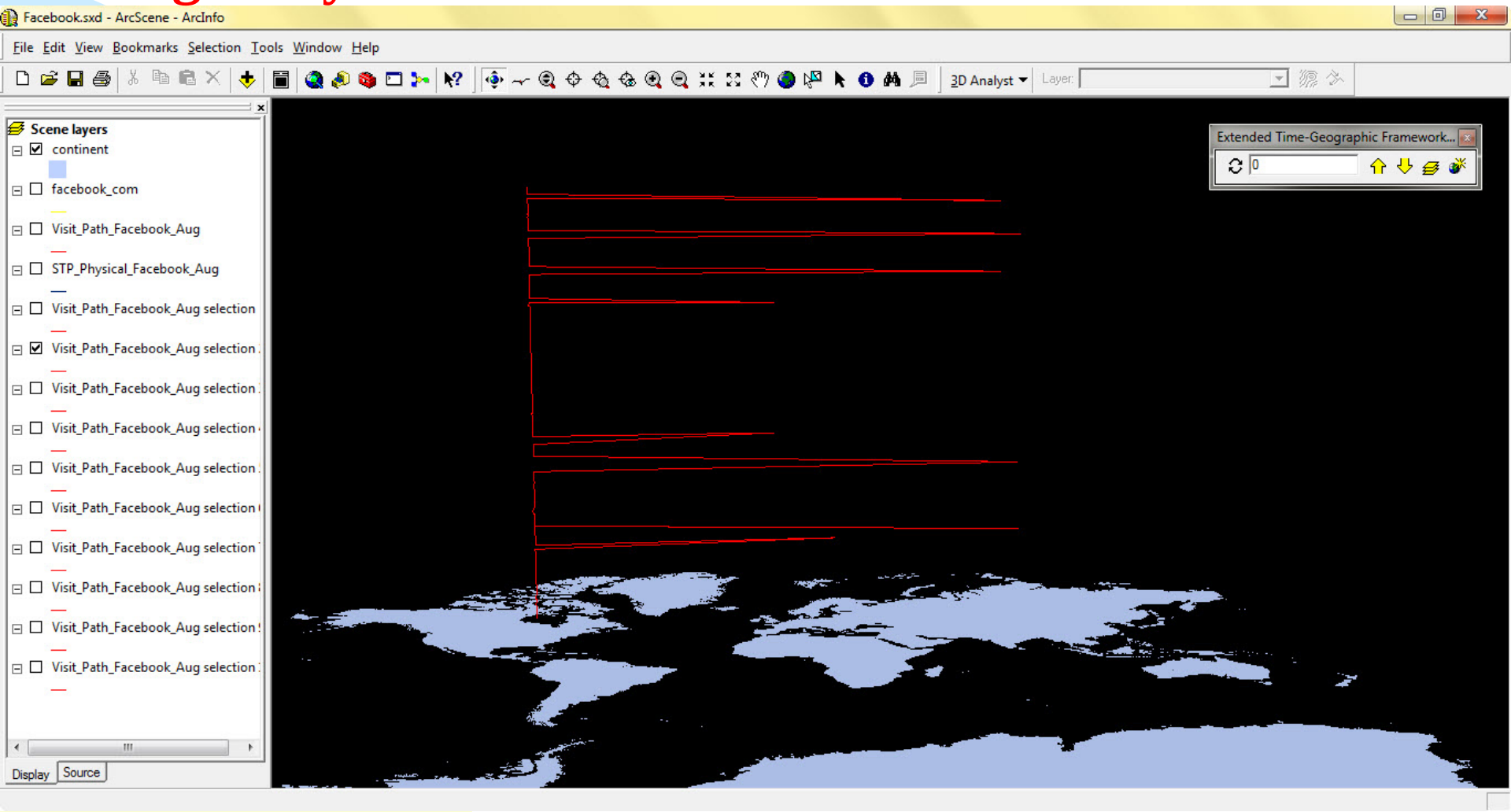
Group 4:
Regularly visited domestic friends



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

Group 5:
Regularly visited international friends



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

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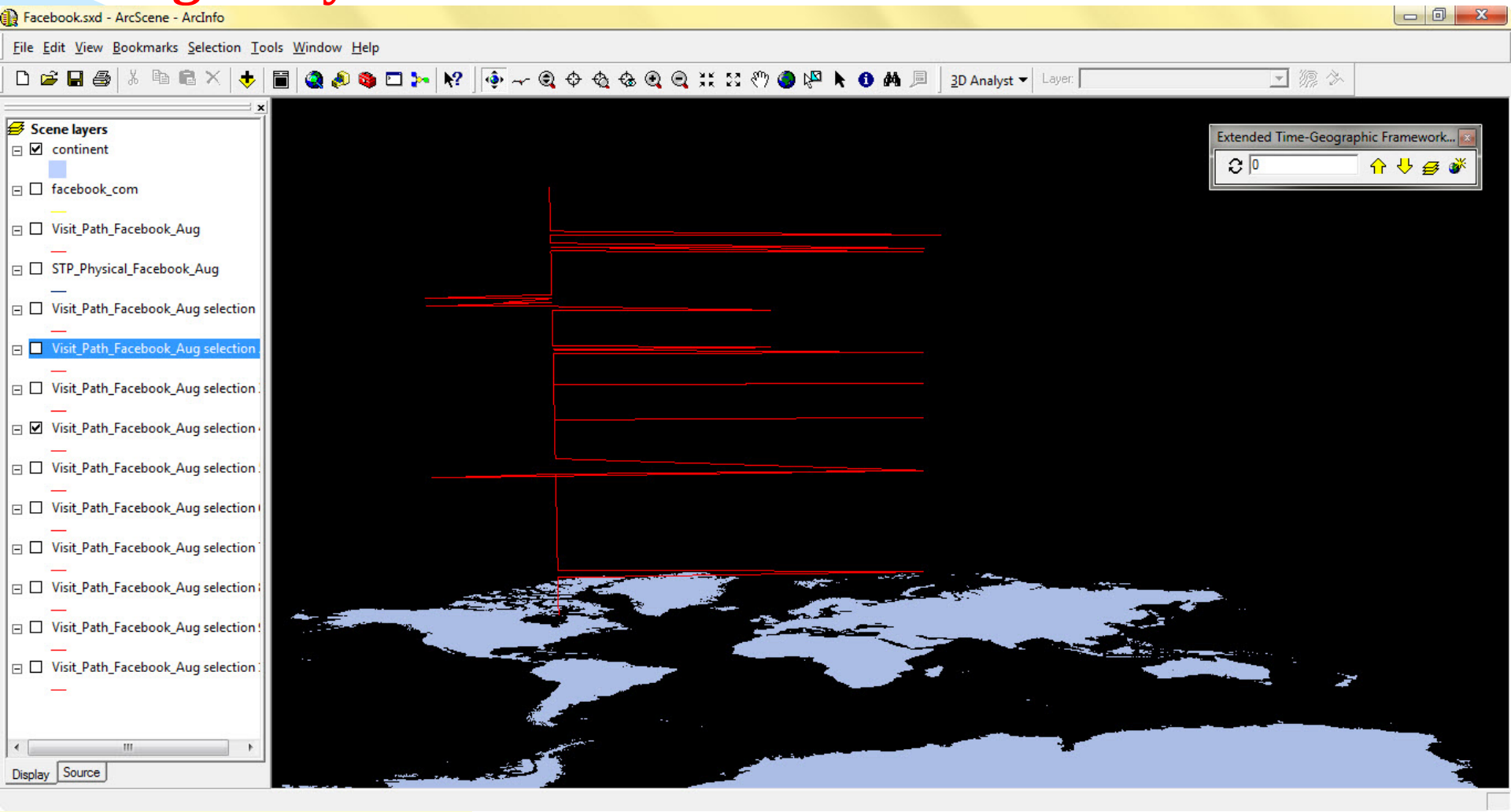
Group 6:
Regularly visited domestic & international friends



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

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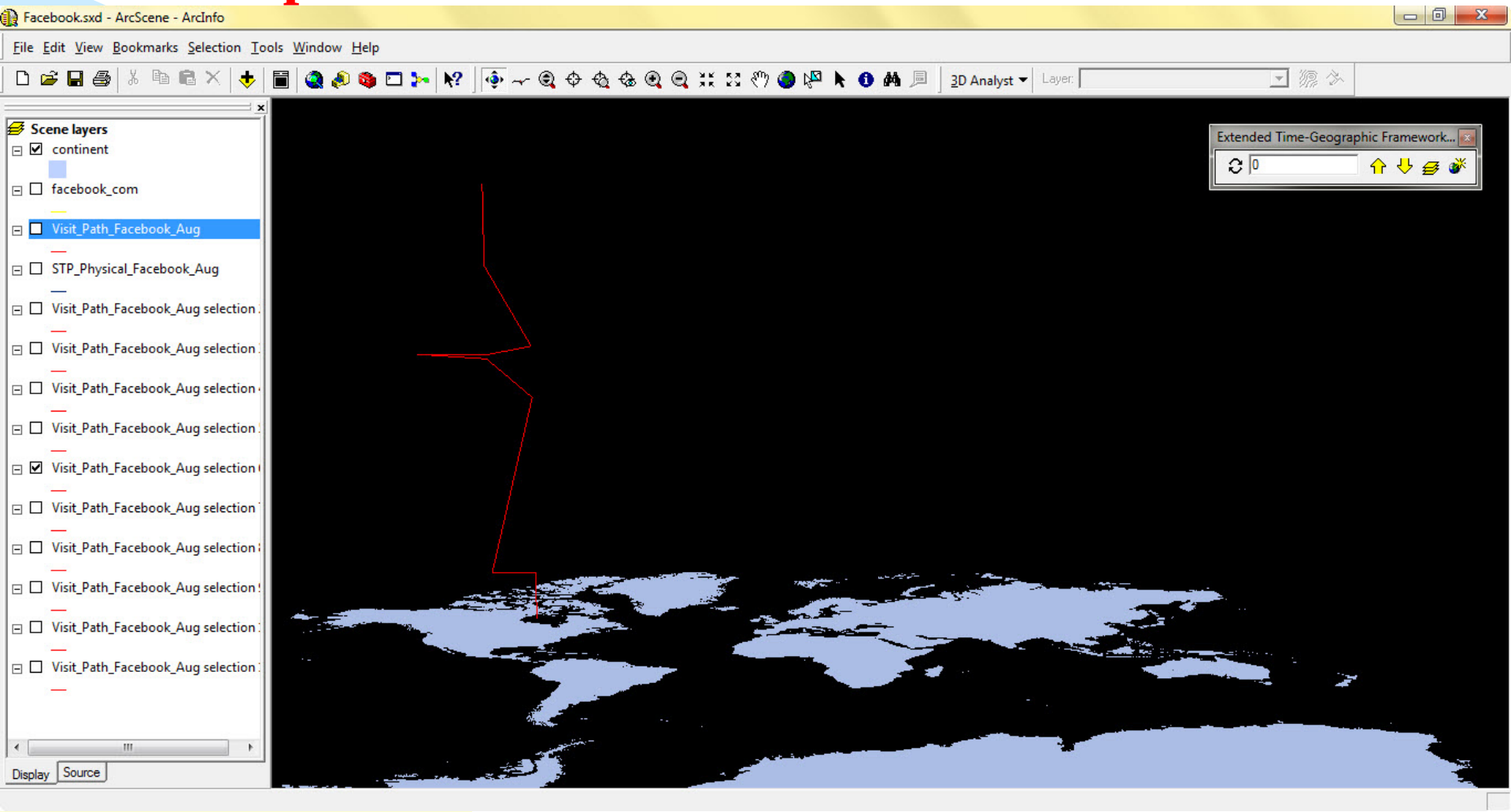
Group 7:
Other patterns



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

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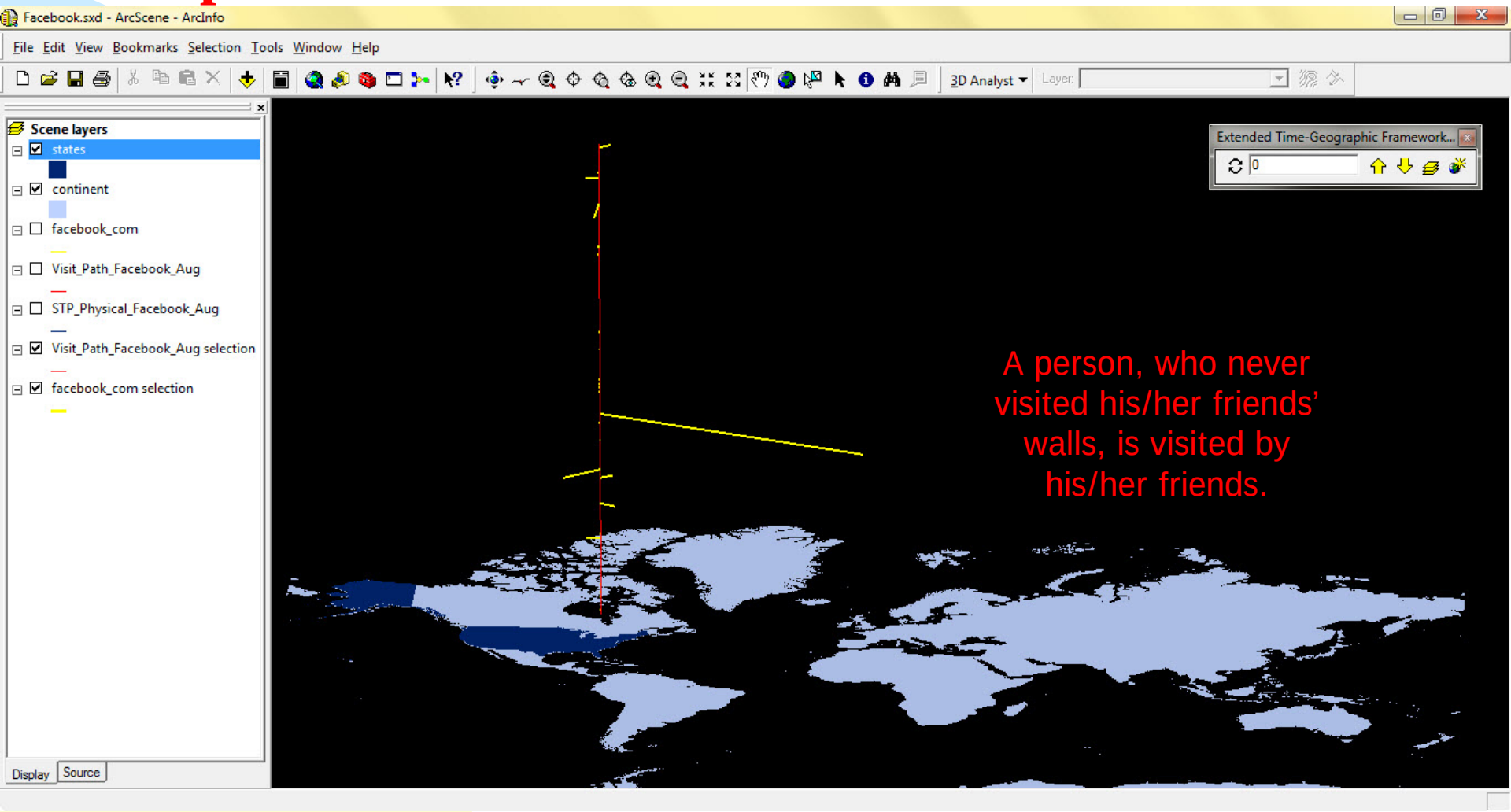
Facebook Data

Incoming vs. Outgoing Traffic

Social space-time path and virtual communications in Space-Time GIS



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

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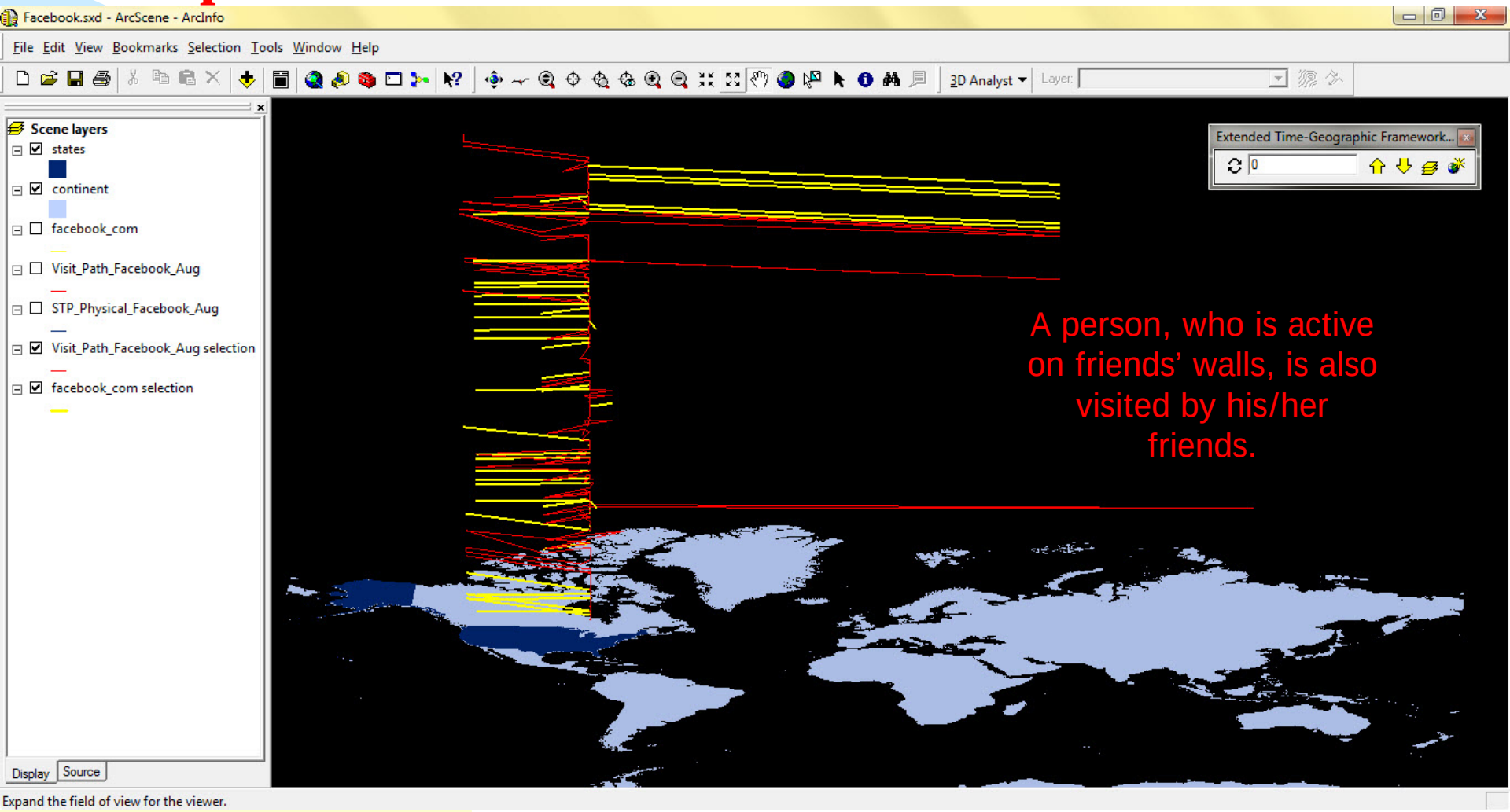
Social space-time path and virtual communications in Space-Time GIS



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

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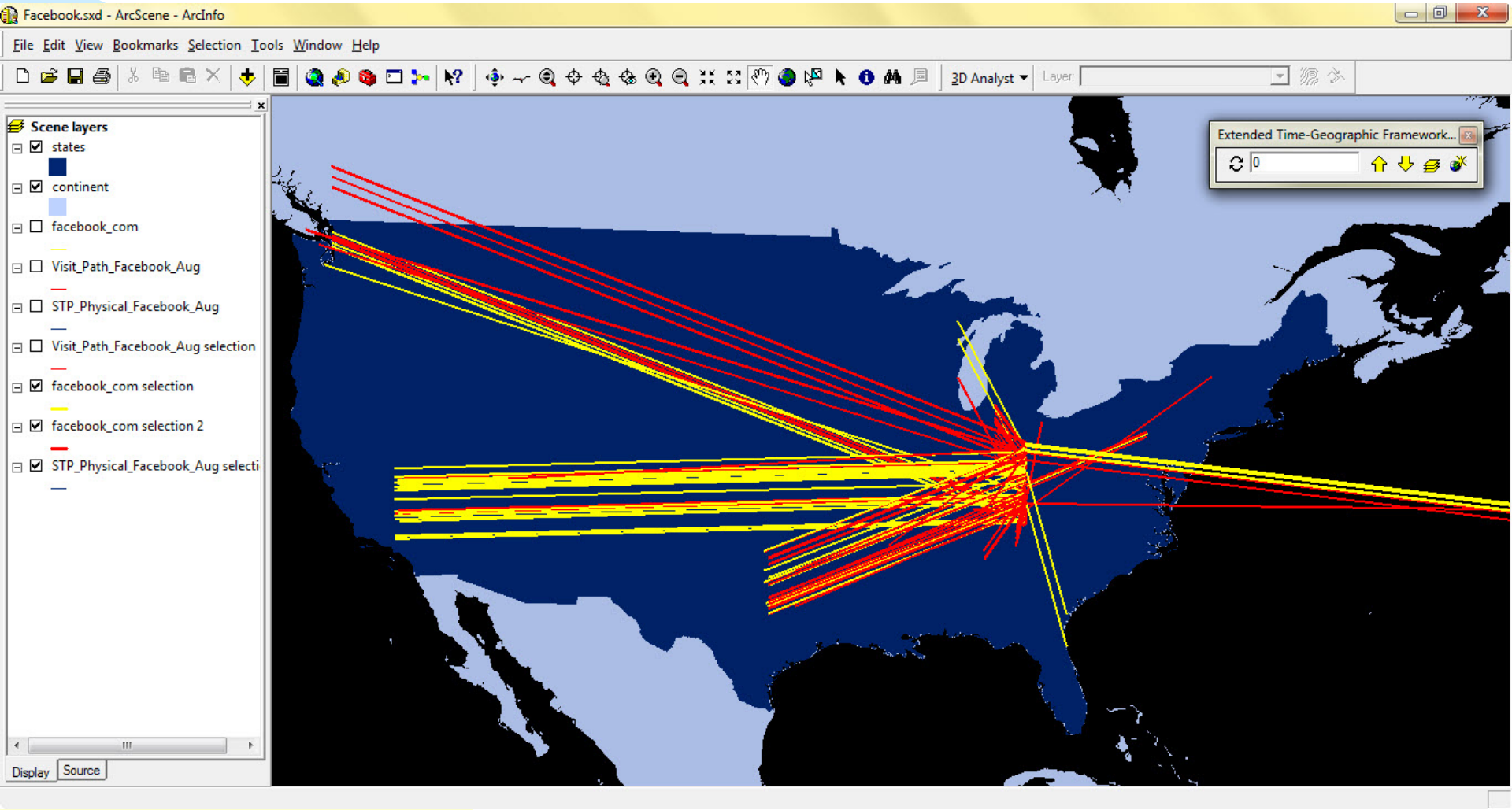
A user's communications with his/her friends



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

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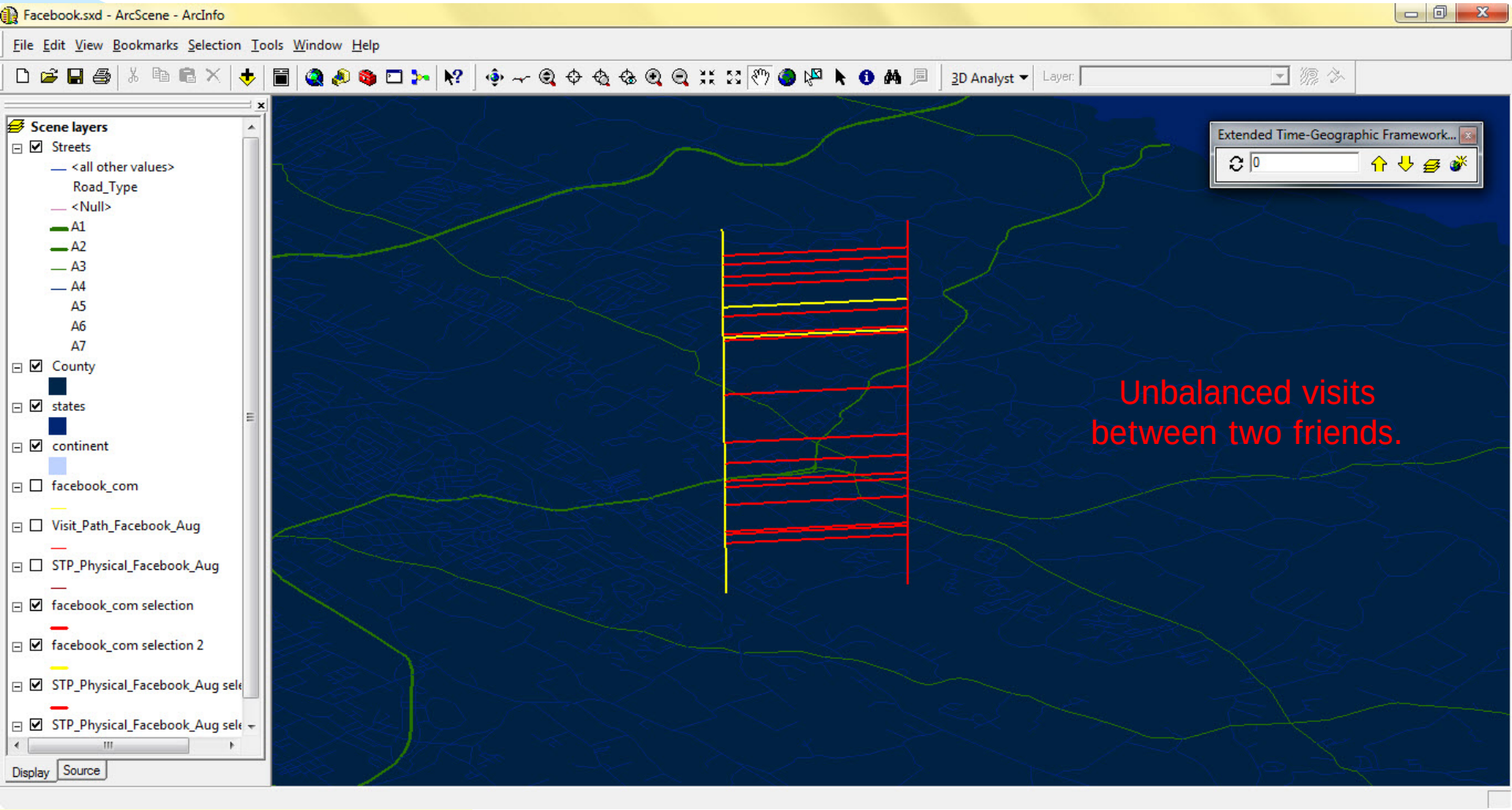
Communications between two friends



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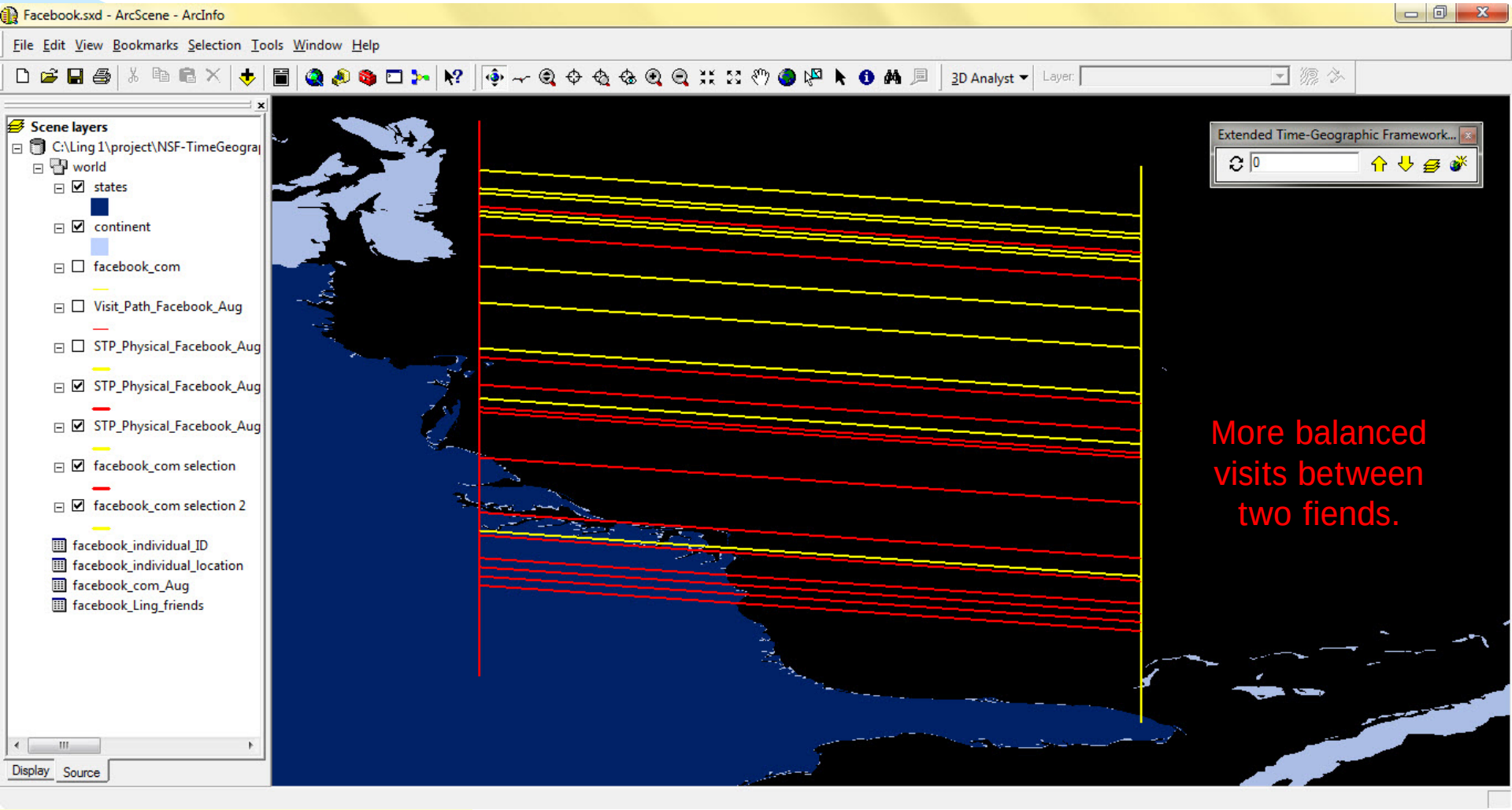
Communications between two friends



(Facebook data provided by Ling Yin, Department of Geography, University of Tennessee, Knoxville.)

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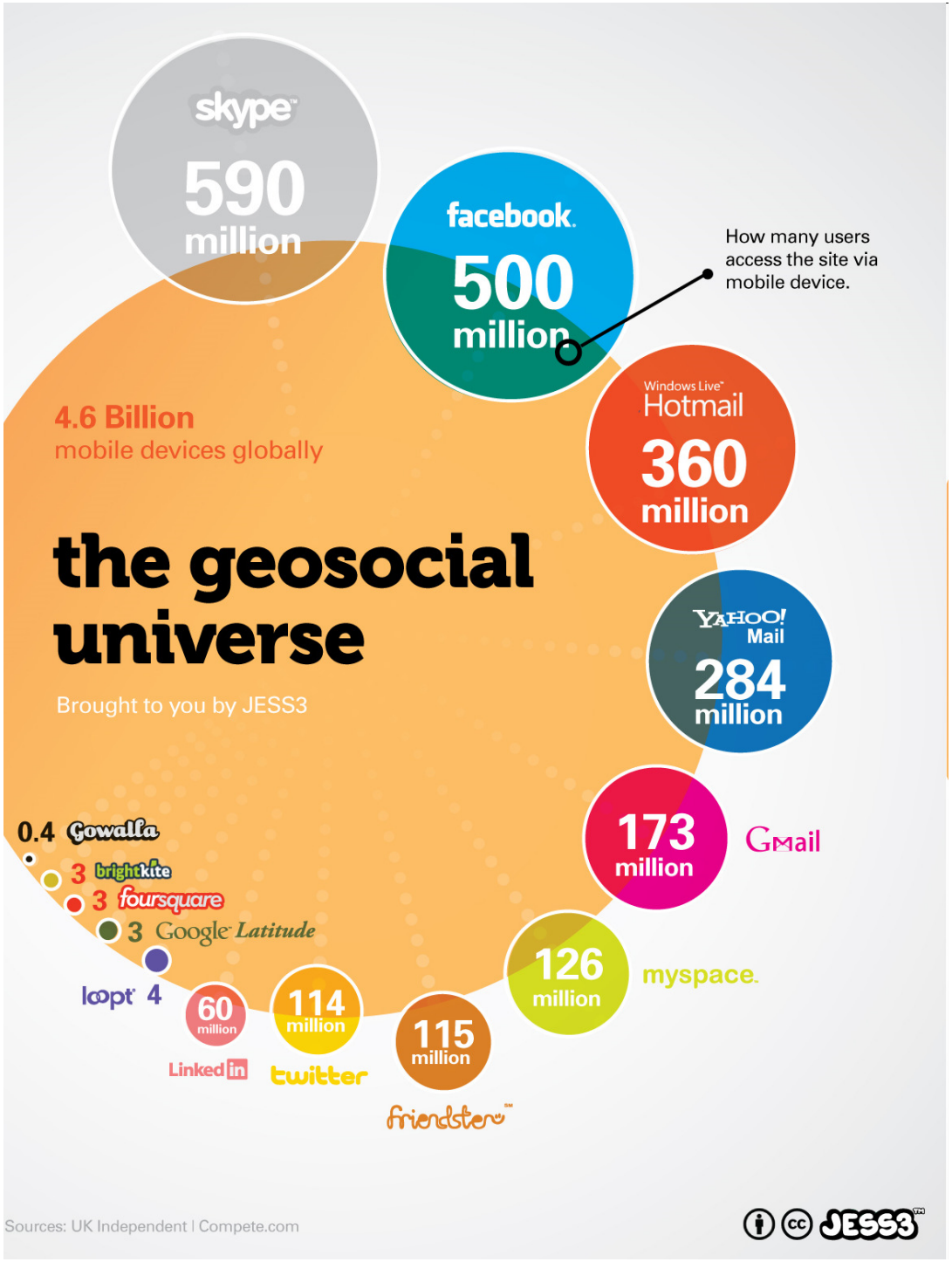
Thank you!

Comments, Suggestions, Questions?

The Social Perspective

Matthew Zook
University of Kentucky, Geography
December 13, 2010

Spatio-Temporal Constraints on Social Networks
UCSB



"This is a time for individuals and their networks… collectivity has become a fragmented personal network…"

B. Wellman, 2001, Physical Place and Cyberplace, *IJURR*, 25(2)

The Power/Politics of code

Representation

Participation

Geo-surveillance & Sousveillance

Merciless Memory

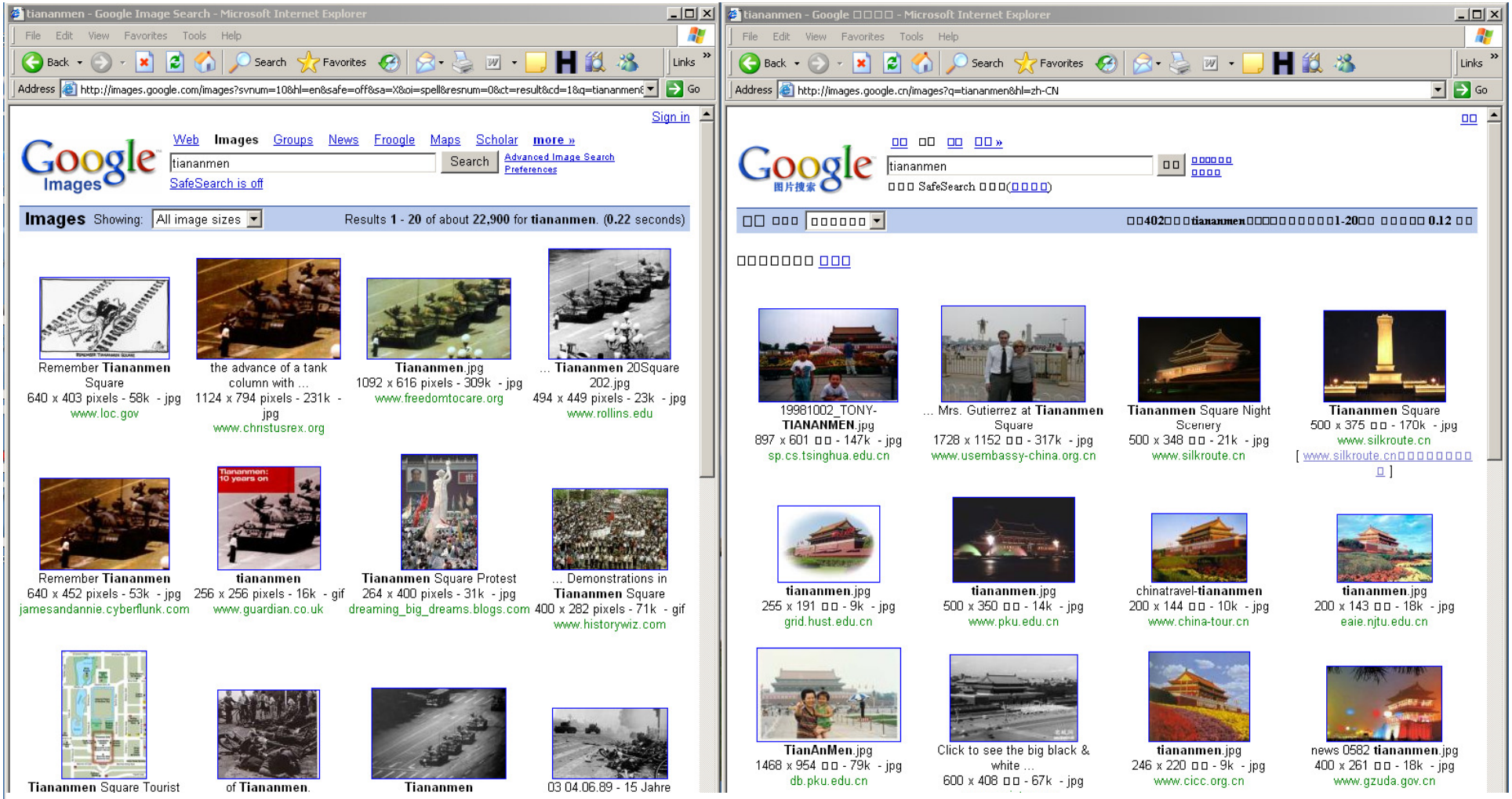
The Power/Politics of Code

(mostly search)

“…search-engine design is not only a technical matter but also a political one. Search engines are important because they provide essential access to the Web both to those with something to say and offer and to those wishing to hear and find. …. "

Introna and Nissenbaum 'Shaping the Web: Why the Politics of Search Engines Matters' (*The Information Society*, 16(3):1-17, 2000)

Tiananmen



Results from 2007; In 2010, Google stopped filtering results at Google.cn

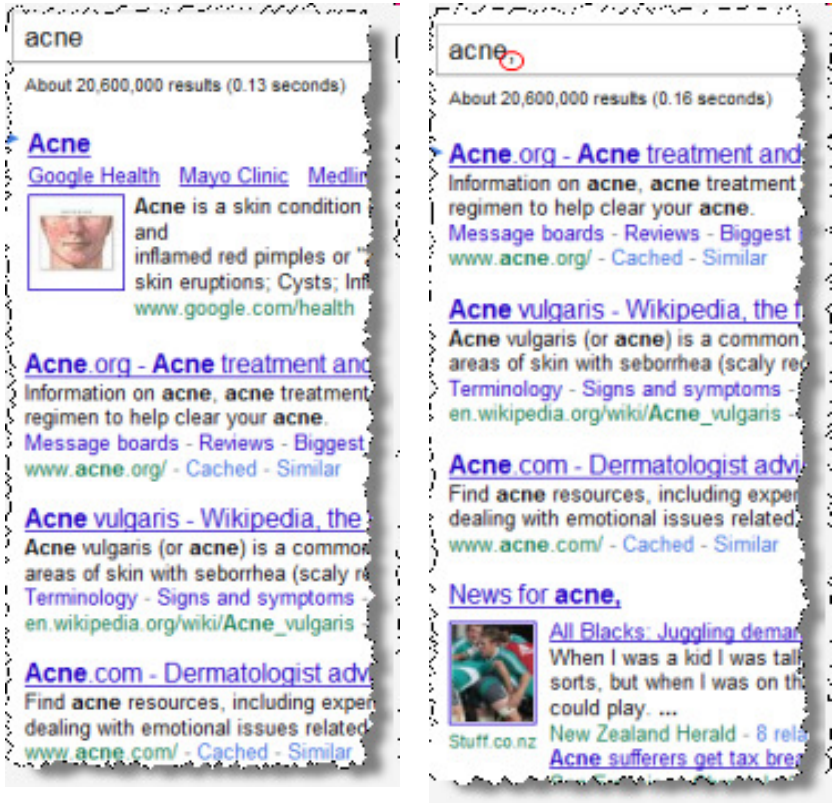
Zook, M. and M. Graham. 2007. The Creative Reconstruction of the Internet: Google and the privatization of cyberspace and DigiPlace. *GeoForum* 38(6): 1322-1343

Hard-Coding Bias in Google "Algorithmic" Search Results
Benjamin Edelman - November 15, 2010

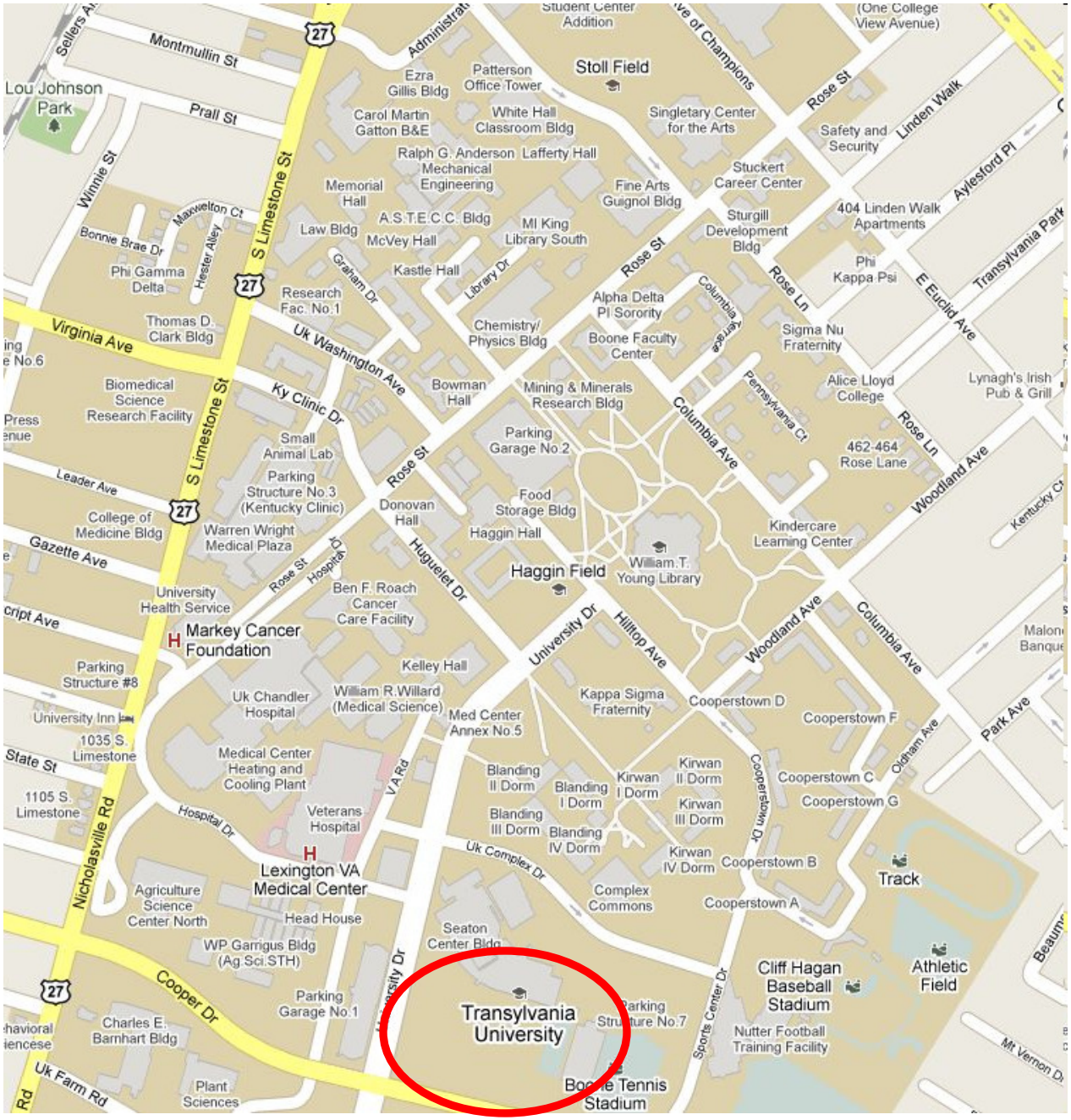
I present categories of searches for which available evidence indicates Google has "hard-coded" its own links to appear at the top of algorithmic search results, and I offer a methodology for detecting certain kinds of tampering by comparing Google results for similar searches. I compare Google's hard-coded results with Google's public statements and promises, including a dozen denials but at least one admission. I tabulate affected search terms and examine other mechanisms also granting favored placement to Google's ancillary services. I conclude by analyzing the impact of Google's tampering on users and competition, and by proposing principles to block Google's bias.

The Comma Test

- Adding a comma to the end of search doesn't generally produce big changes
- But some terms (finance and health) the comma gives different results
- Rather than getting the Google Brand (Google Health) other sites are featured
- Other searches prominently display Google's partners



Source: http://www.benedelman.org/hardcoding/



For about two weeks in October 2010 the University of Kentucky was labeled Transylvania University

Code helps naturalize thinking in one direction rather than another

http://www.floatingsheep.org

Did you notice the code?

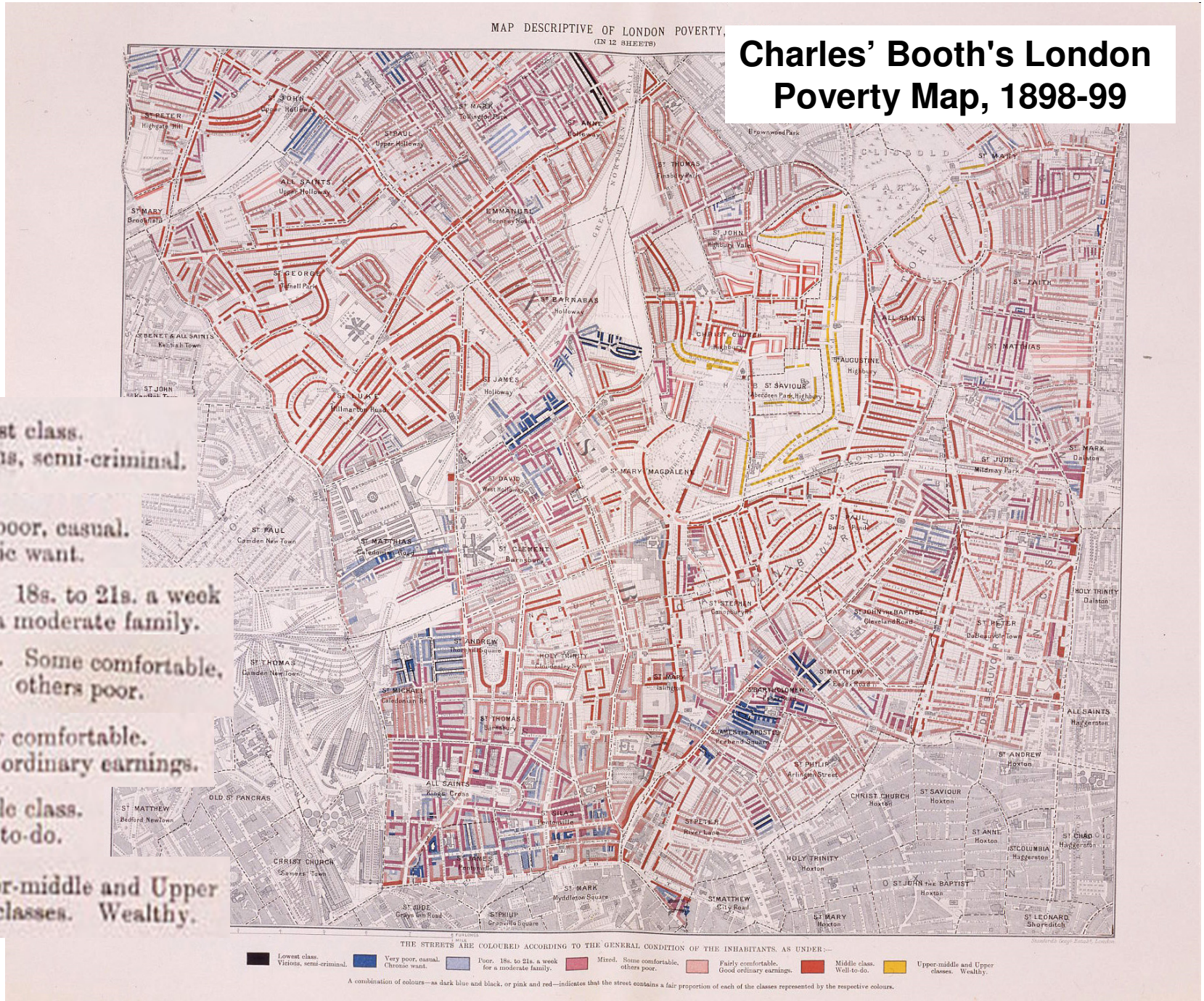
Click to add title

- Click to add text

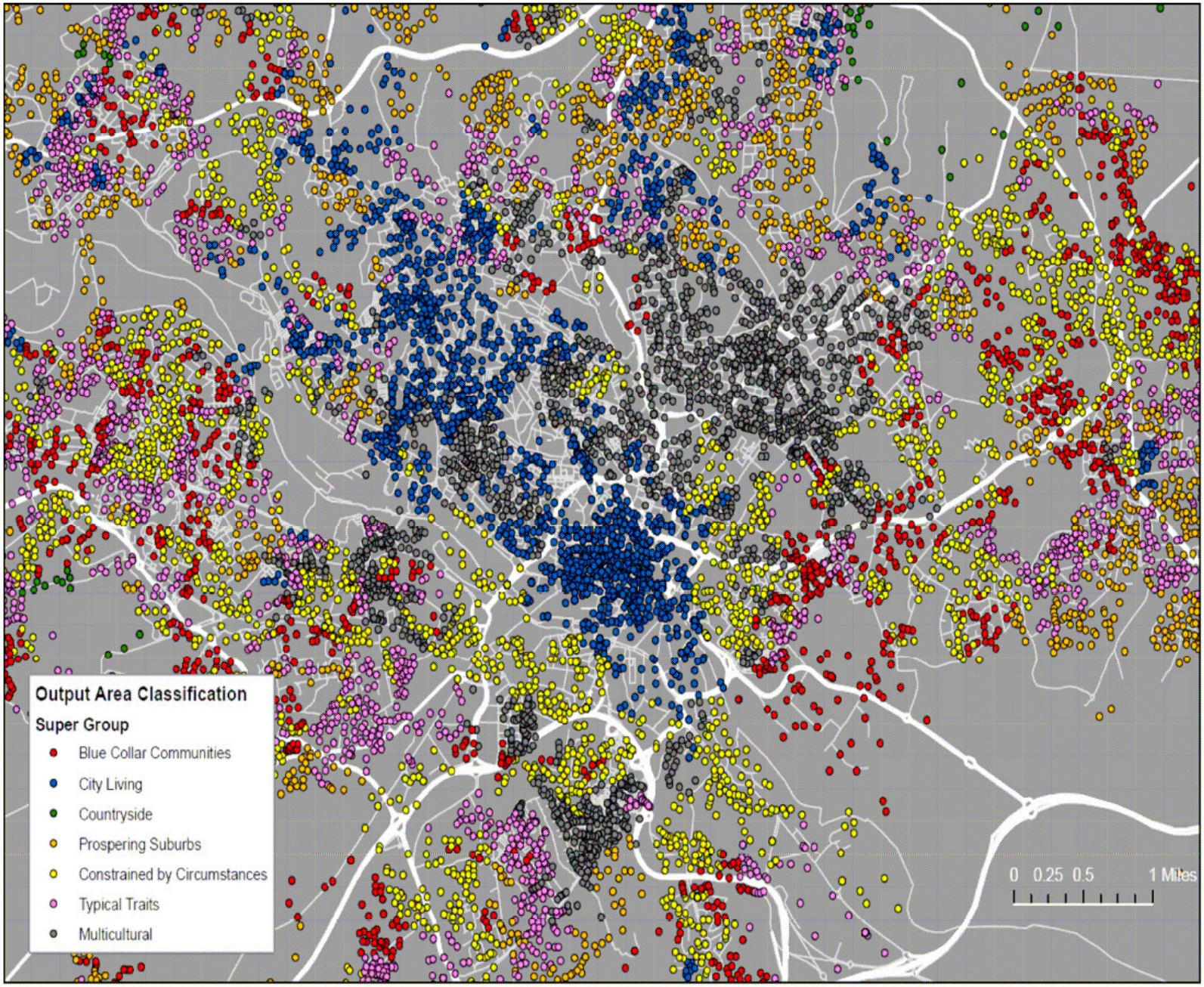
Idea from Rob Kitchin & Martin Dodge. 2011. *Code/Space*. MIT Press

Representation

Charles' Booth's London Poverty Map, 1898-99

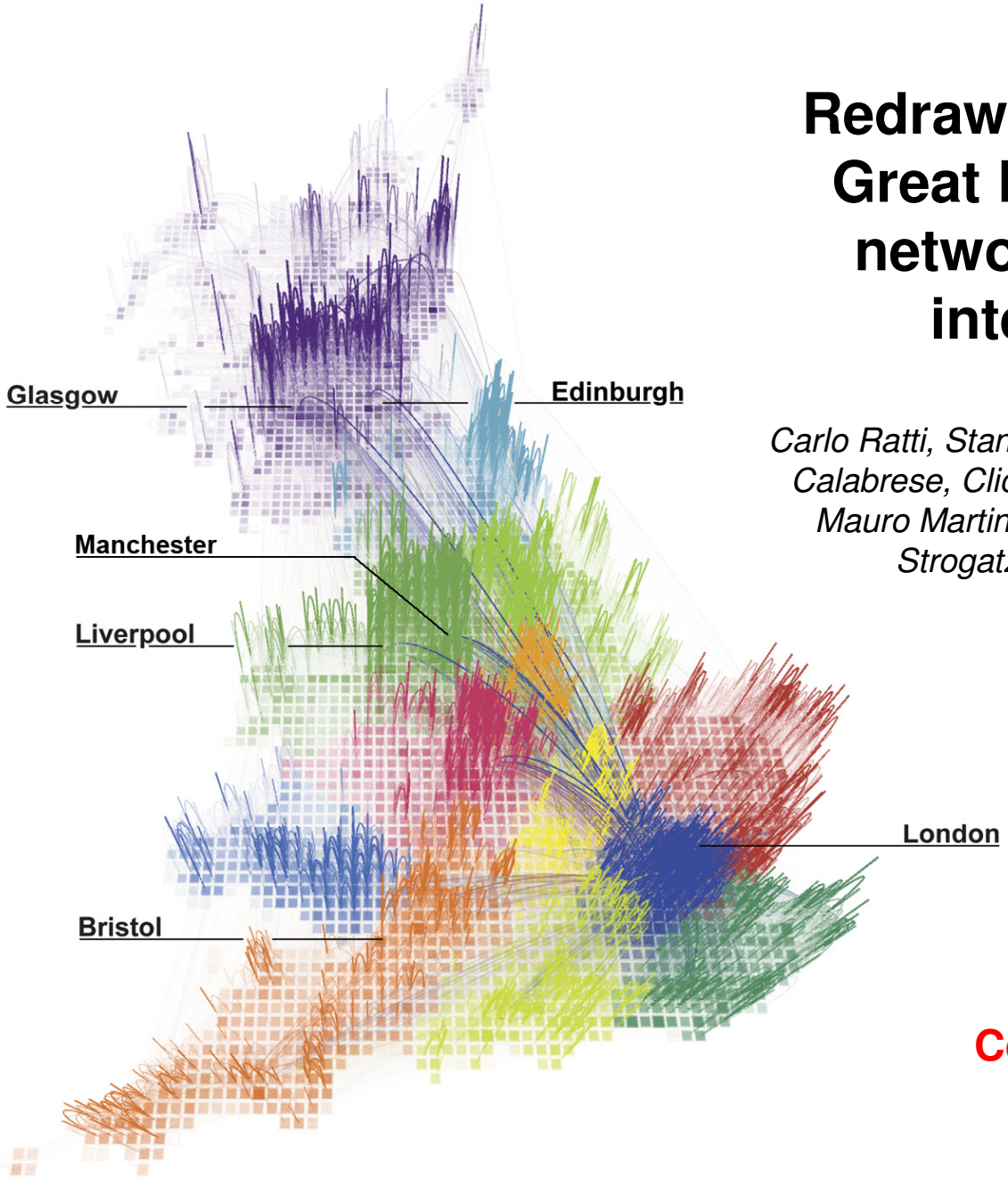


Rob Kitchin & Martin Dodge. 2011. *Code/Space*. MIT Press, p. 206



© Crown Copyright/database right 2010. An Ordnance Survey/EDINA supplied service. Road network data by OpenStreetMap.

Rob Kitchin & Martin Dodge. 2011. *Code/Space*. MIT Press



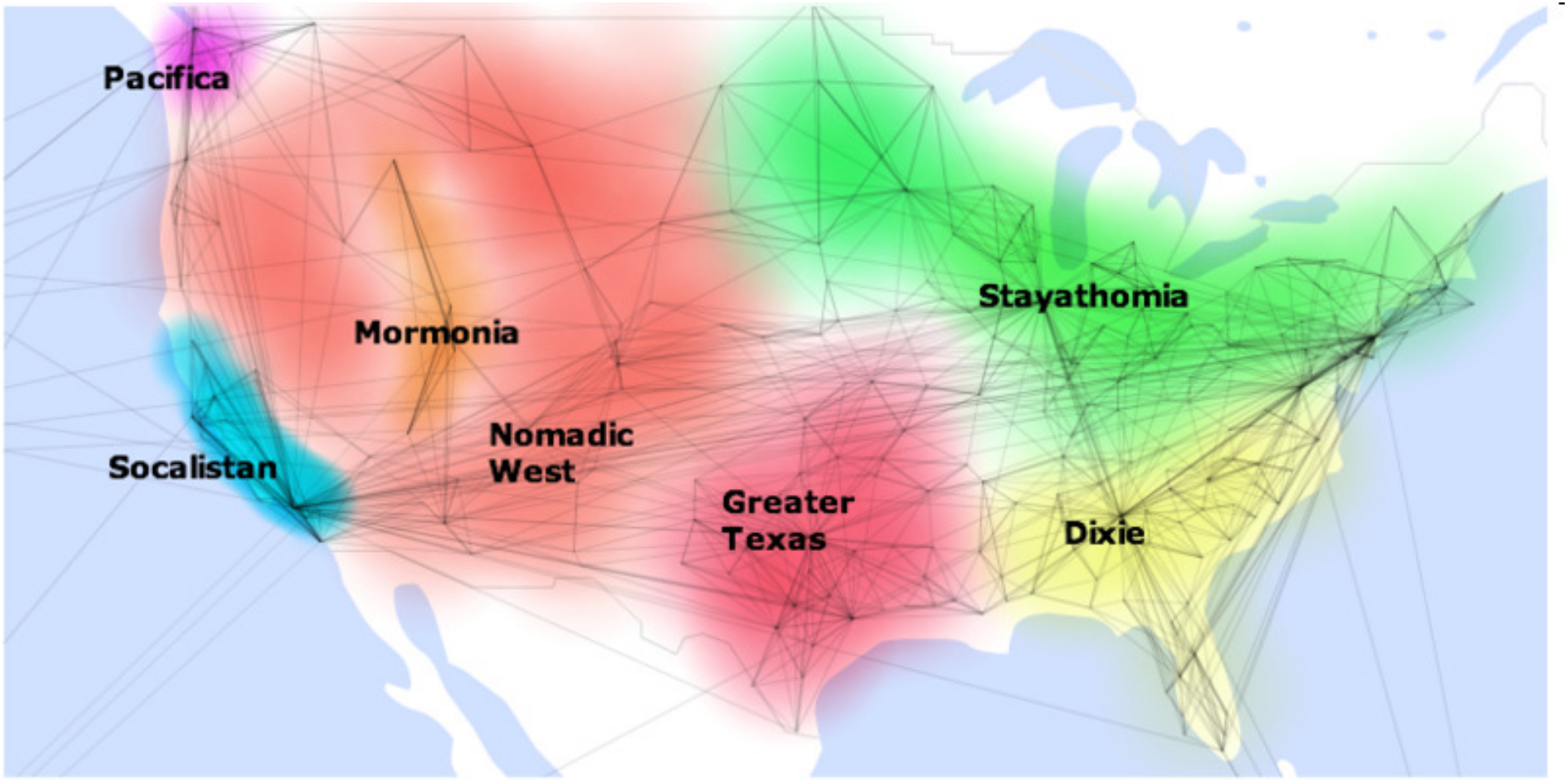
Redrawing the map of Great Britain from a network of human interactions.

Carlo Ratti, Stanislav Sobolevsky, Francesco Calabrese, Clio Andris, Jonathan Reades, Mauro Martino, Rob Claxton, Steven H Strogatz - PLoS ONE, 2010

Context of the Calls?

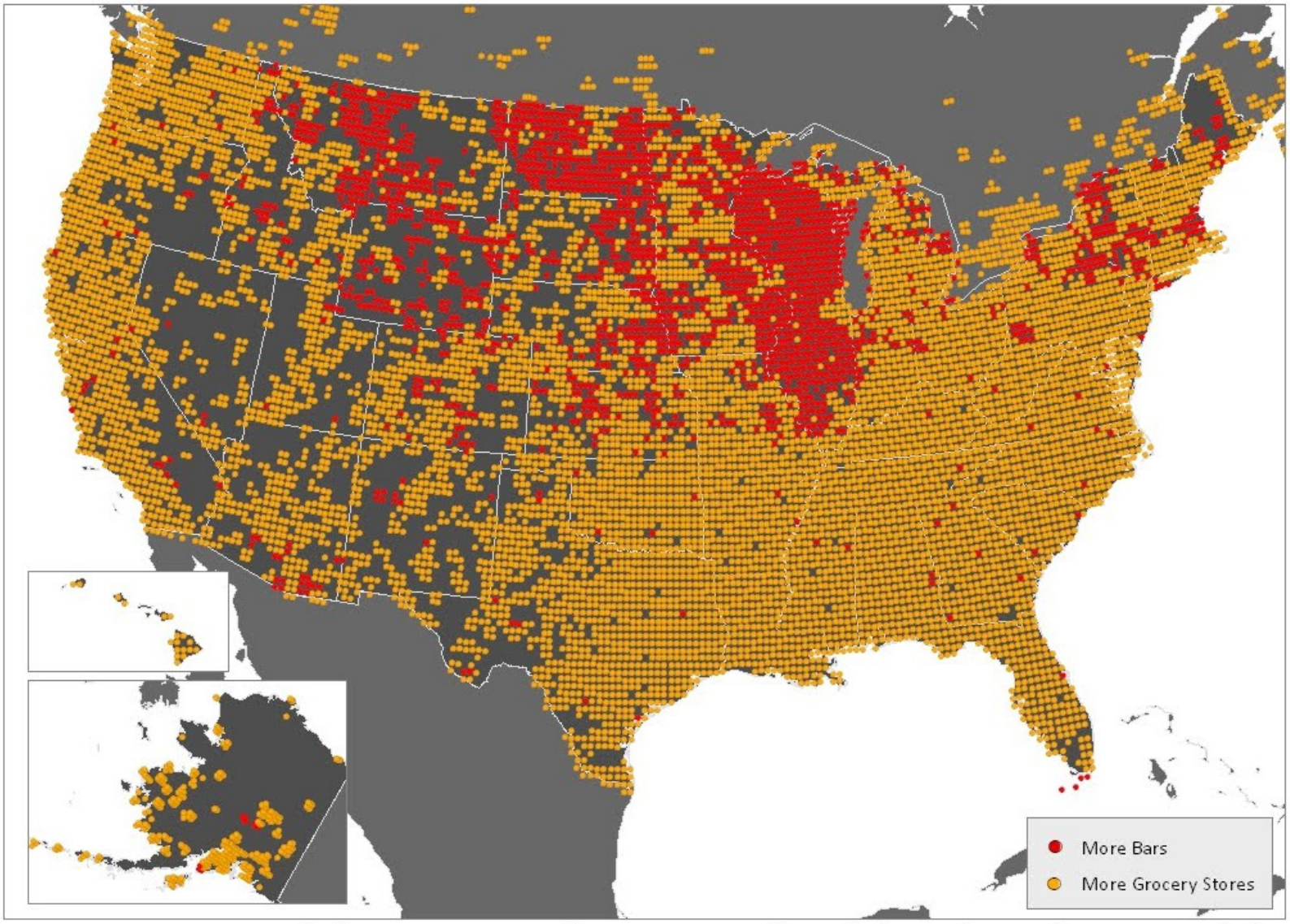
http://senseable.mit.edu/network/network&society2.html

The “Nations” of Facebook



http://petewarden.typepad.com/searchbrowser/2010/02/how-to-split-up-the-us.html

The Beer Belly of America



BARS AND GROCERY STORES: Shading represents more references to one search term in the Google Maps directory at a particular location, e.g., a red circle indicates more references to bars than grocery stores. Data collected in August 2008.

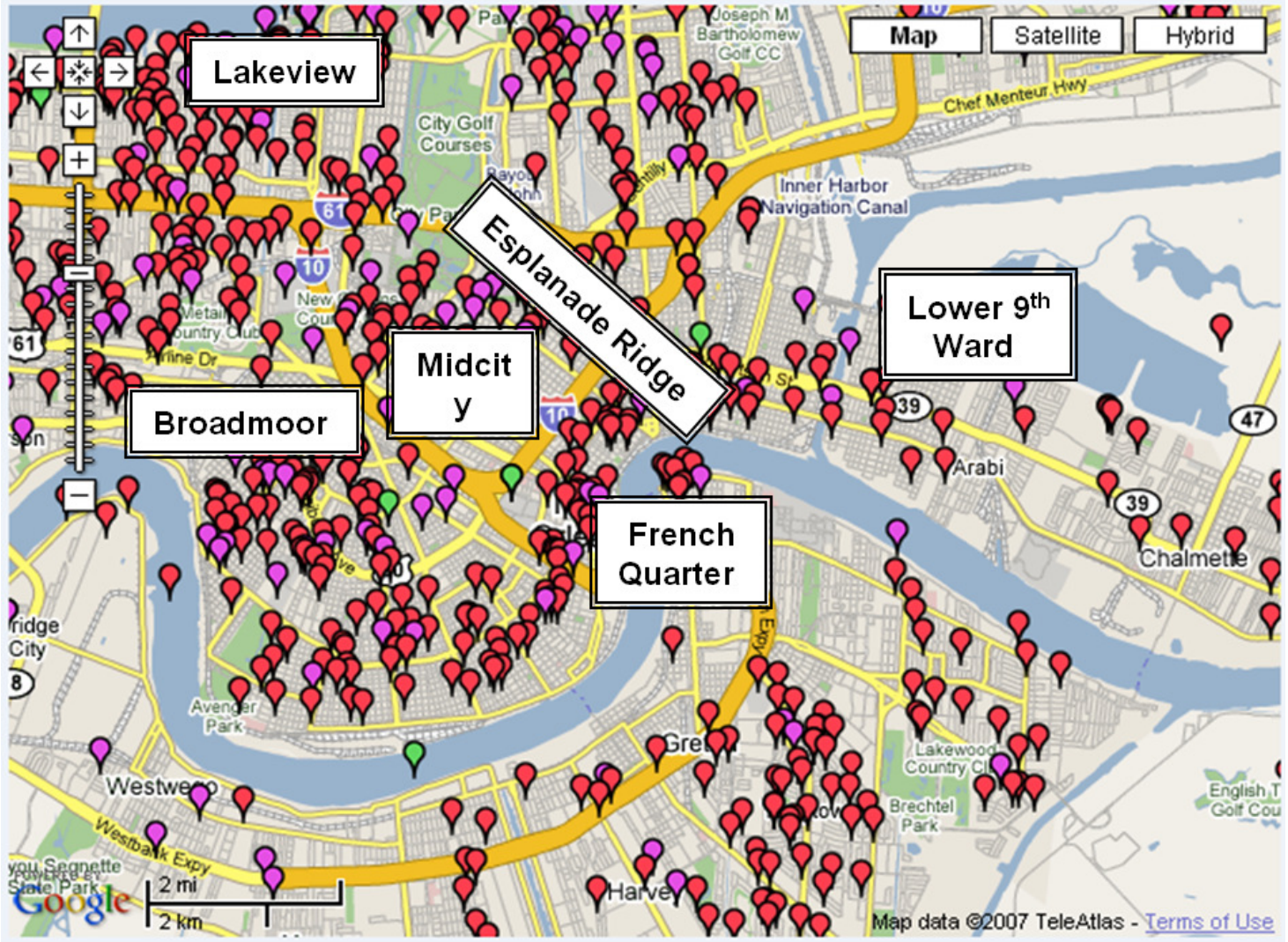
Copyleft Floatingsheep.org, 2010

http://www.floatingsheep.org

Participation

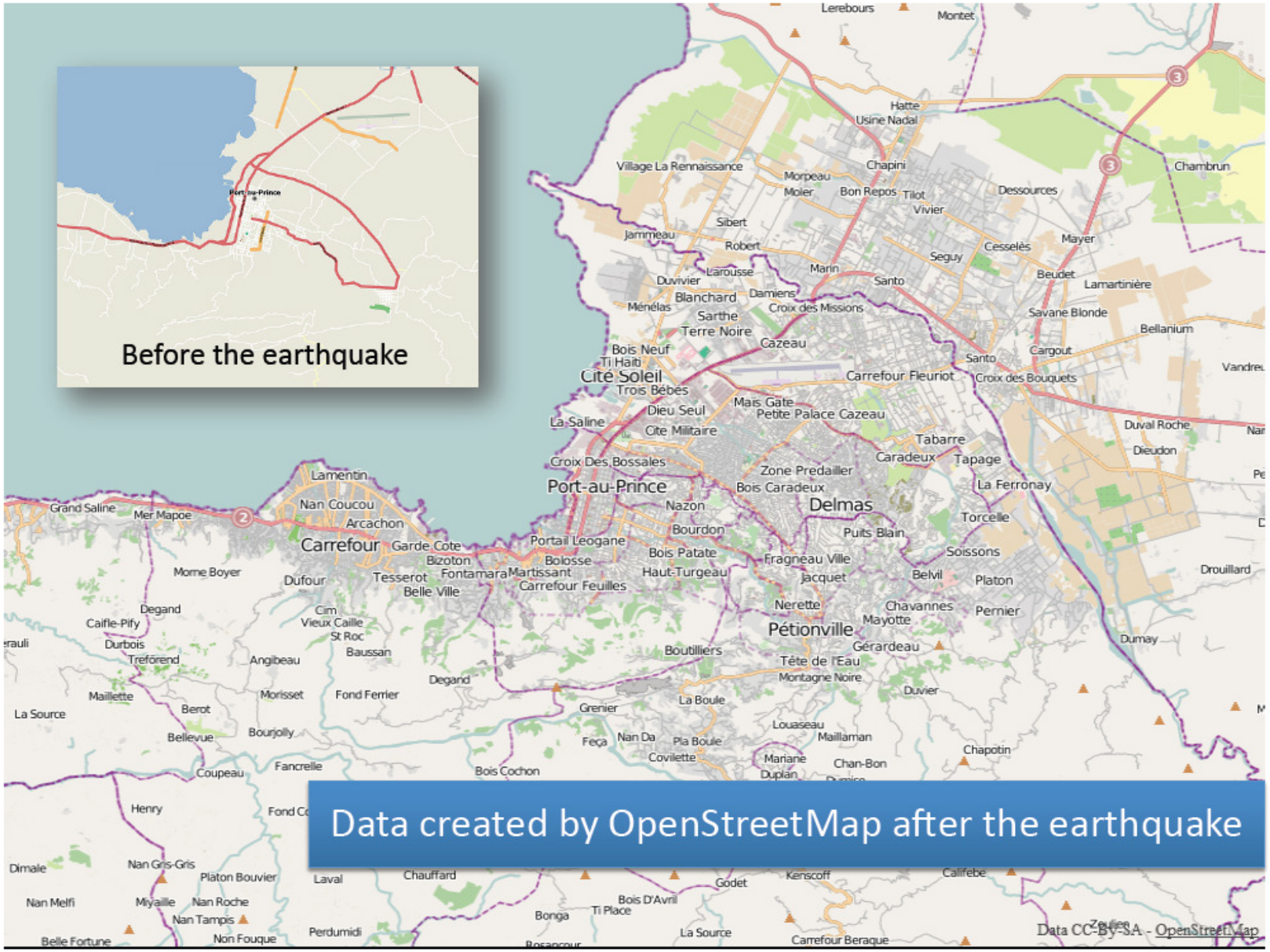
Scipinious.com

Mashup program, using Google Maps API which allowed people to make storm reports post Katrina



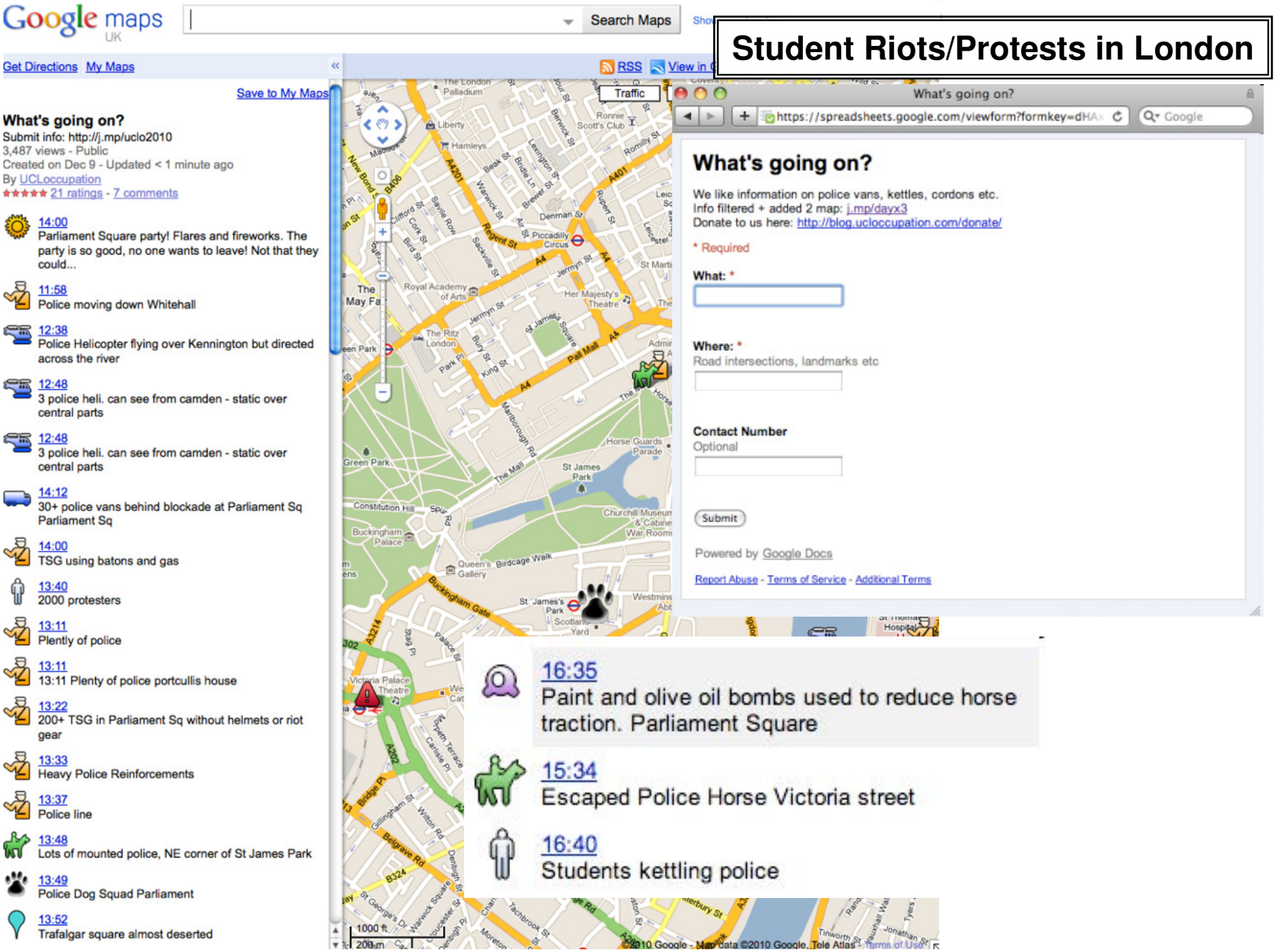
Crutcher, M. and M. Zook. 2009. Placemarks and Waterlines: Racialized Cyberscapes in Post Katrina Google Earth. *GeoForum* 40(4): 523-534

OSM and Haiti



Sean Groman, Fortius One

Student Riots/Protests in London

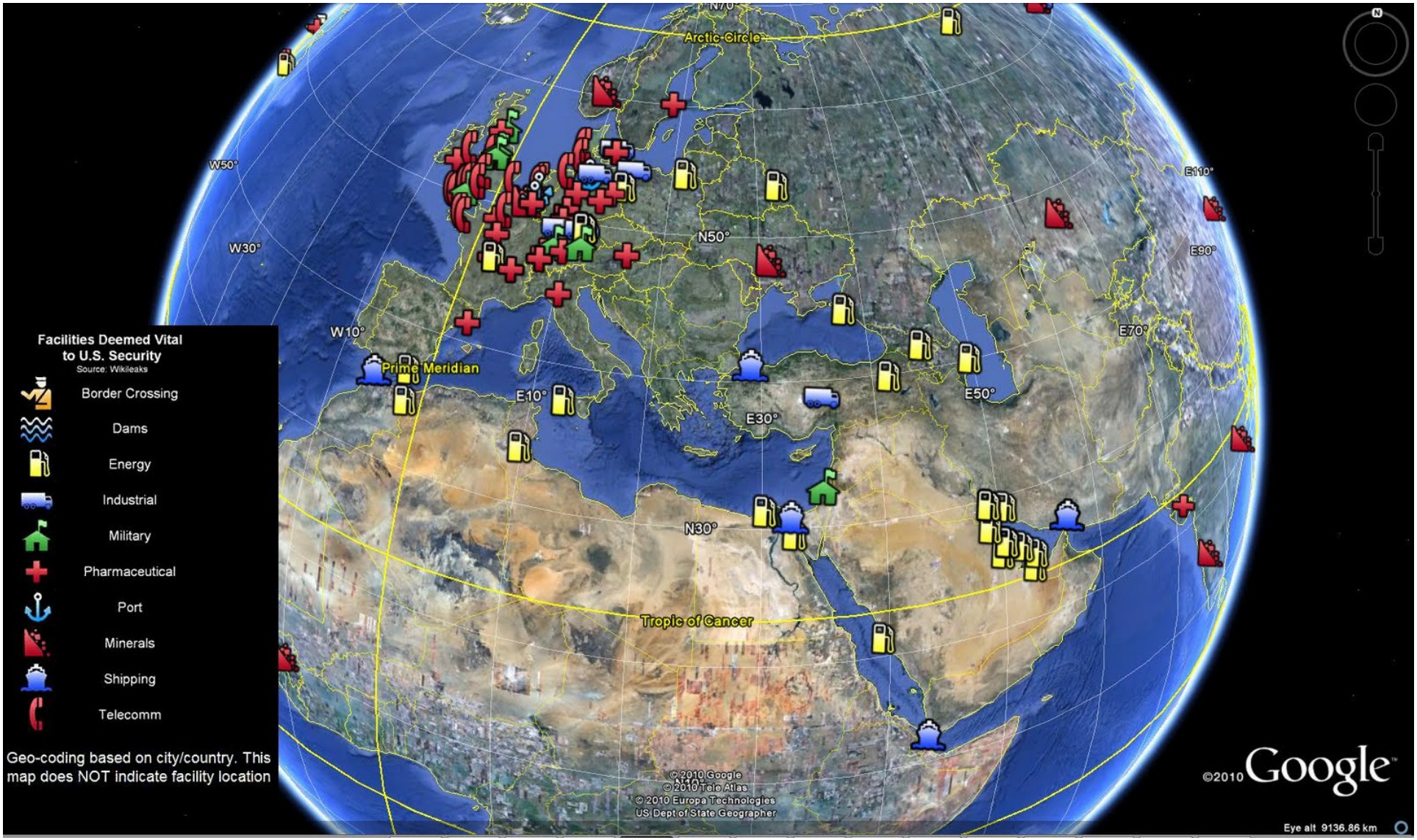


http://irevolution.wordpress.com/2010/12/09/maptivism-london/

http://bengoldacre.posterous.com/student-protestors-using-live-tech-to-outwit

Vital Facilities to U.S. Security

(from Wikileaks)

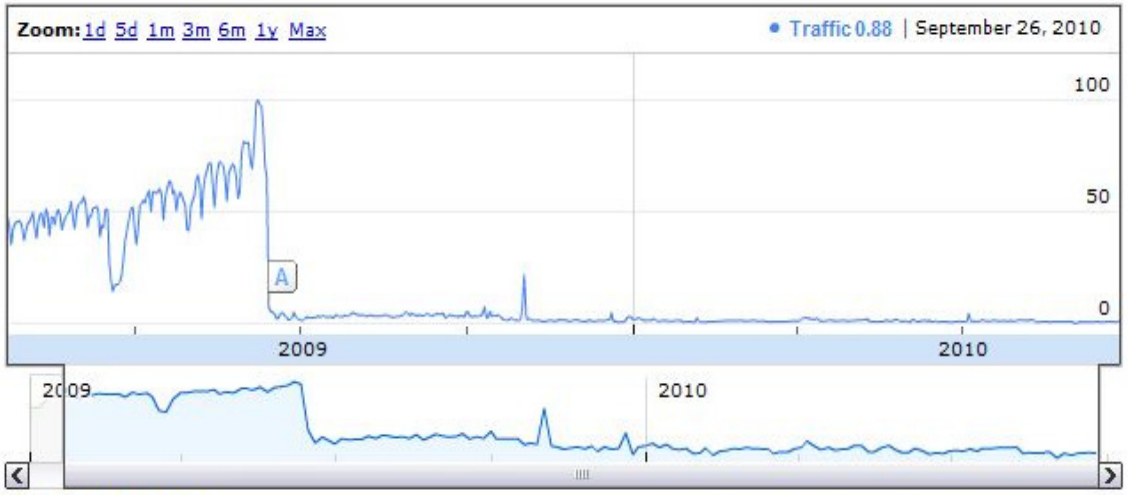


http://www.floatingsheep.org

Geo-surveillance and Sousveillance

Iran | YouTube

Iran YouTube Traffic

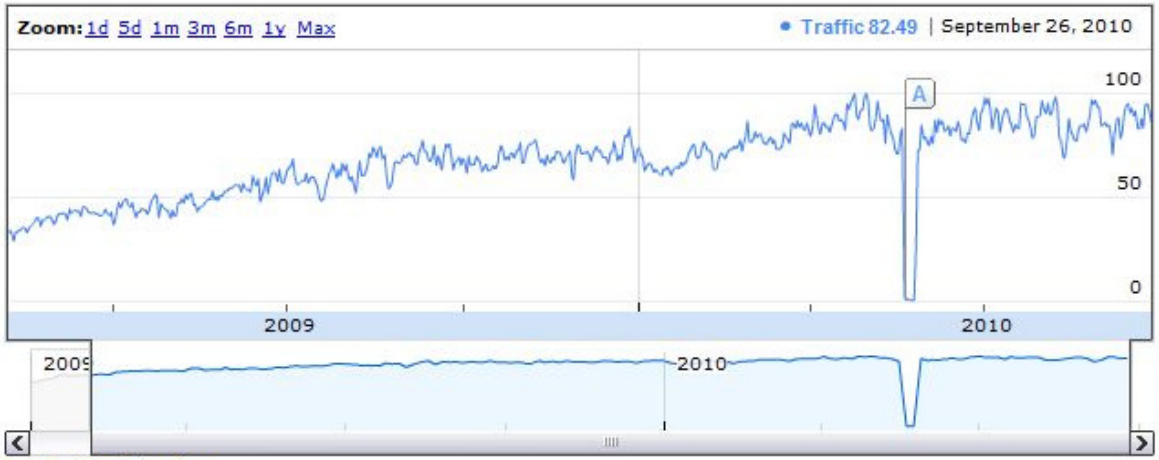


Link to this chart

A. Jun 13, 2009 YouTube has been inaccessible in Iran since June 12, 2009, following the disputed Presidential election.
2009-6-14

Pakistan | YouTube

Pakistan YouTube Traffic



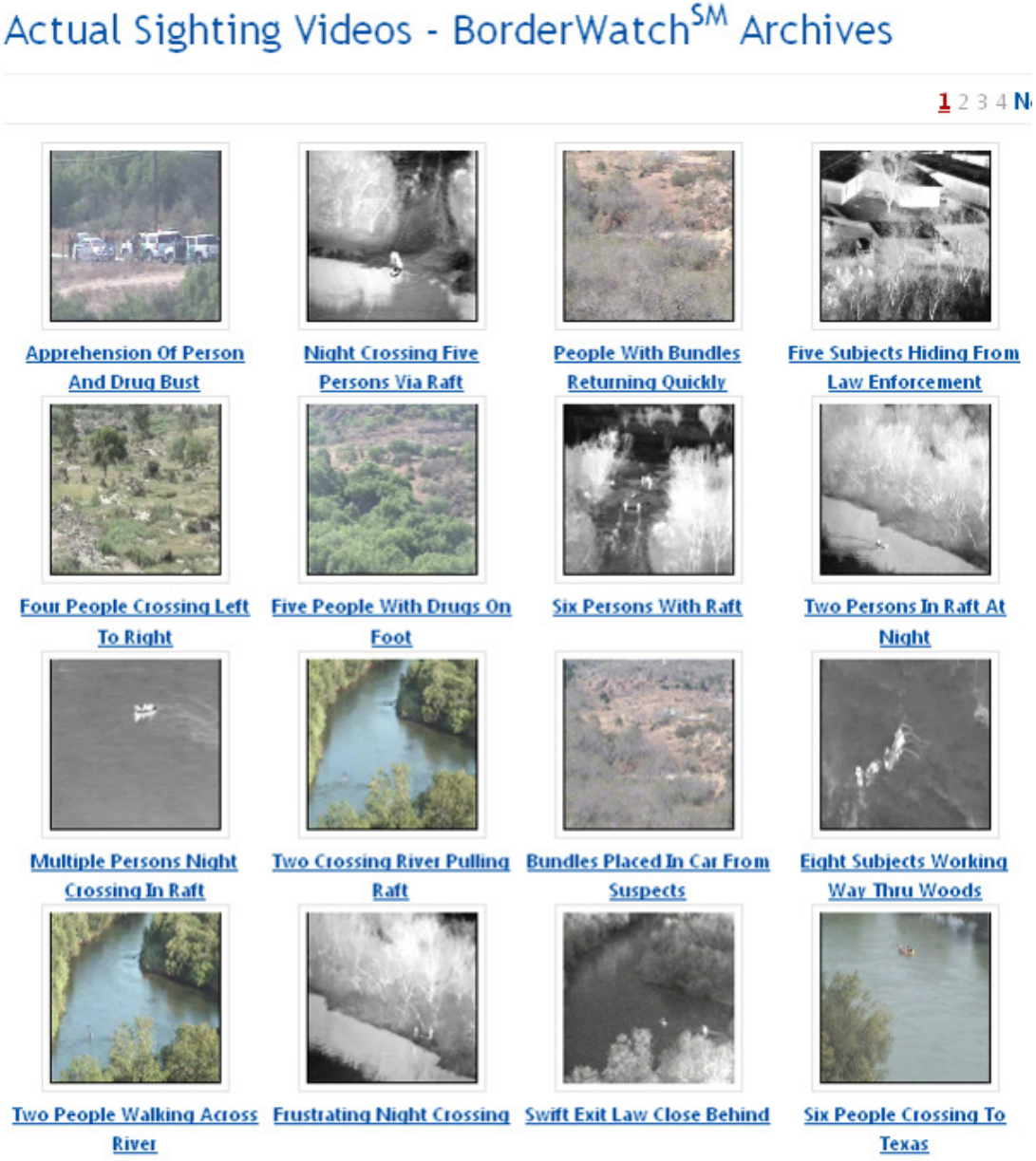
Link to this chart

A. May 20, 2010 YouTube was inaccessible in Pakistan for 10 days in May 2010 due to concerns around the "Everyone Draw Mohammad Day" competition organized by a Facebook user.
2010-5-21

Artist Conception

http://www.chrisoakley.com/the_catalogue.html

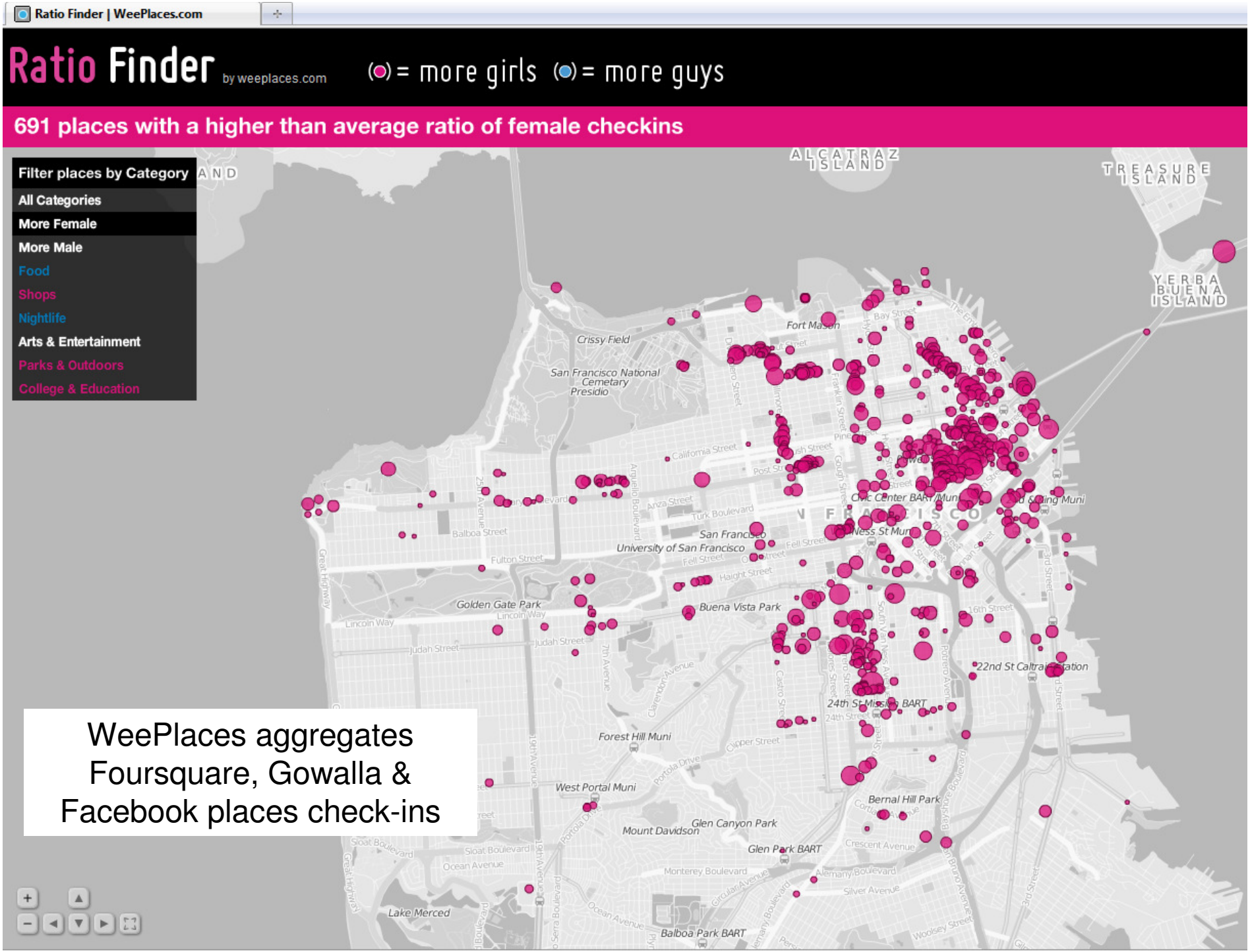
Bradley, E. & Clarke, K. (2011 In Press). Outdoor Webcams as Geospatial Sensor Networks: Challenges, Issues and Opportunities. Cartography and Geographic Information Science

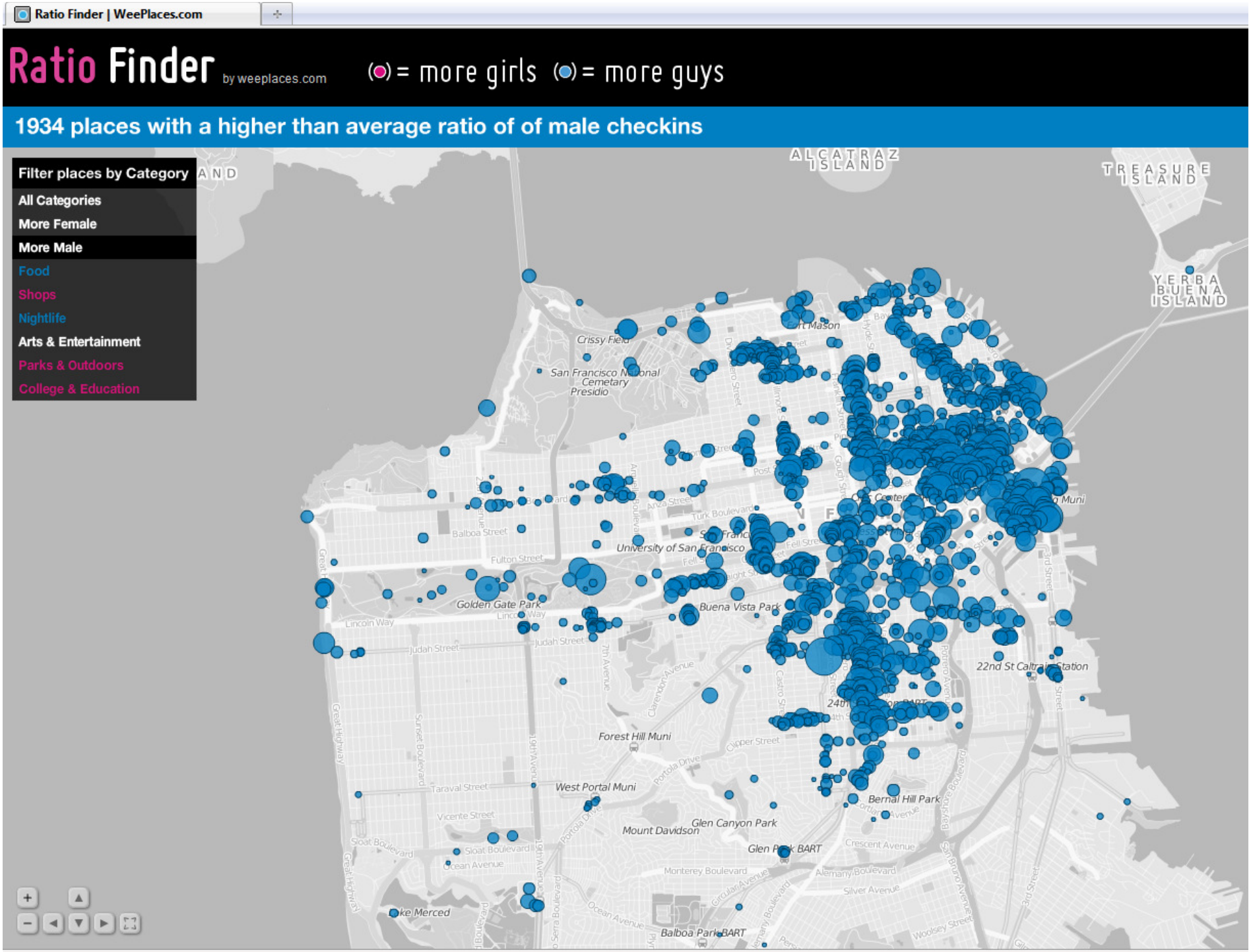


Bradley, E. & Clarke, K. (2011 In Press). Outdoor Webcams as Geospatial Sensor Networks: Challenges, Issues and Opportunities. Cartography and Geographic Information Science

…code disciplines people by making them enact certain grammars of action and enforcing more pervasive modes of surveillance, automated management and self-disciplining.

Rob Kitchin & Martin Dodge. 2011. *Code/Space*. MIT Press, p. 206


Ratio Finder | WeePlaces.com
Ratio Finder by weeplaces.com
(●) = more girls (●) = more guys
691 places with a higher than average ratio of female checkins
Filter places by Category
All Categories
More Female
More Male
Food
Shops
Nightlife
Arts & Entertainment
Parks & Outdoors
College & Education
ALCATRAZ ISLAND
TREASURE ISLAND
YERBA BUENA ISLAND
Crissy Field
San Francisco National Cemetery
Presidio
Fort Mason
Golden Gate Park
Buena Vista Park
University of San Francisco
Forest Hill Muni
West Portal Muni
Mount Davidson
Glen Canyon Park
Glen Park BART
Bernal Hill Park
Lake Merced
Balboa Park BART
24th St Mission BART
22nd St Caltrain Station
Civic Center BART/Muni
WeePlaces aggregates Foursquare, Gowalla & Facebook places check-ins


Ratio Finder | WeePlaces.com
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ALCATRAZ ISLAND
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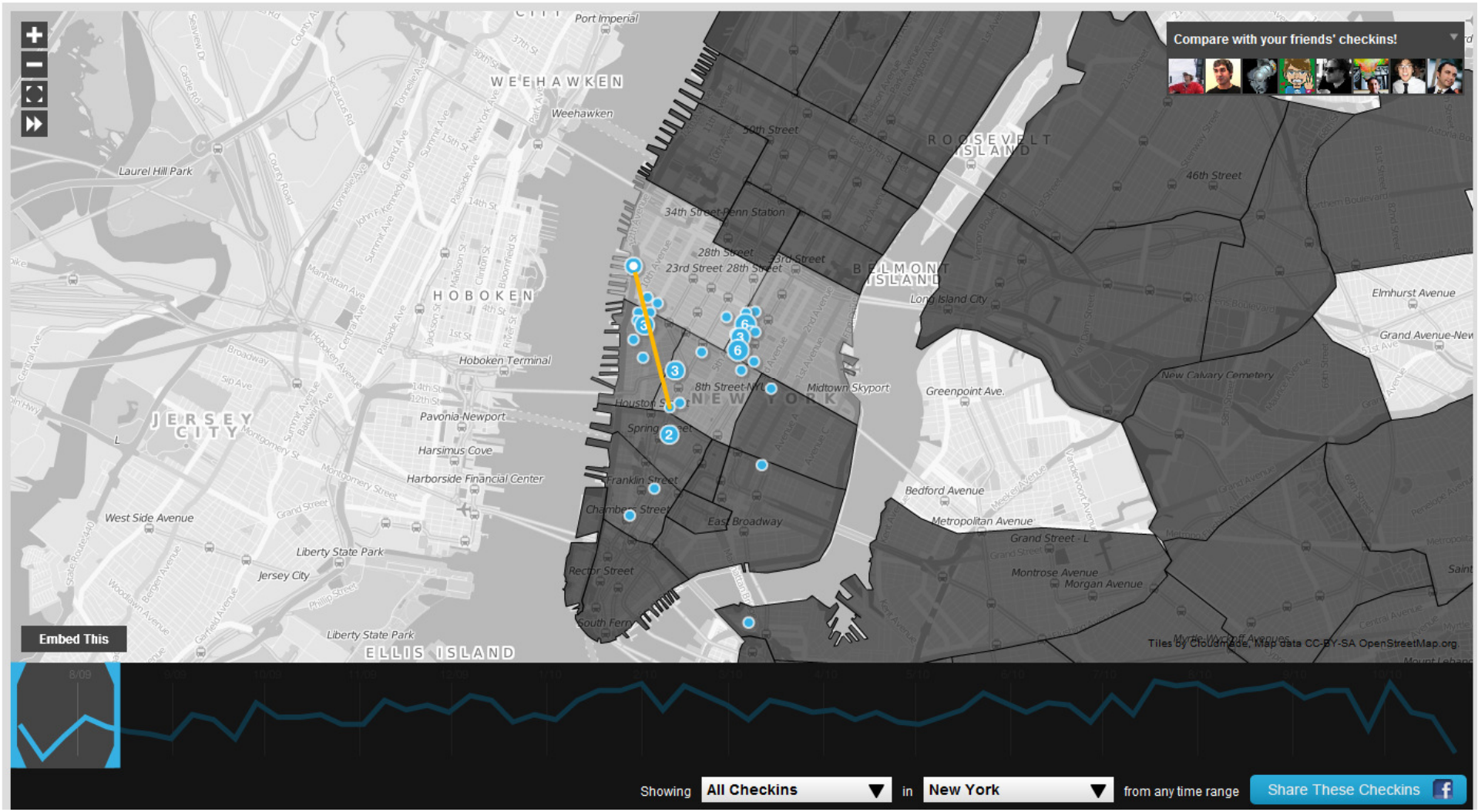
San Francisco National Cemetery
Presidio
Fort Mason
University of San Francisco
Golden Gate Park
Buena Vista Park
22nd St Caltrain Station
Forest Hill Muni
West Portal Muni
Mount Davidson
Glen Canyon Park
Bernal Hill Park
Glen Park BART
Balboa Park BART
Lake Merced
Fulton Street
Lincoln Way
Judah Street
Taraval Street
Vicente Street
Sloat Boulevard
Ocean Avenue
Monterey Boulevard
Portola Drive
Clipper Street
Crescent Avenue
Silver Avenue
Alemany Boulevard
Balboa Street
Turk Boulevard
Anza Street
Great Highway
Sunset Boulevard
19th Avenue
7th Avenue
Clarendon Avenue
Castro Street
Bayshore Boulevard
3rd Street

Fred Wilson

3509 Views



http://www.weeplaces.com/fred-wilson/

PLEASE ROB ME

Raising awareness about over-sharing

Check out our guest blog post on the CDT website.

Why

Hey, do you have a Twitter account? Have you ever noticed those messages in which people tell you where they are? Pretty annoying, eh. Well, they're actually also potentially pretty dangerous. We're about to tell you why.

Don't get us wrong, we love the whole location-aware thing. The information is very interesting and can be used to create some pretty awesome applications. However, the way in which people are stimulated to participate in sharing this information, is less awesome. Services like Foursquare allow you to fulfill some primeval urge to colonize the planet. A part of that is letting everyone know you own that specific spot. You get to tell where you are and if you're there first, it's yours. O, and of course there's badges..

More Info

Home

Why

Made Possible By

Forthehack

Foursquare

Twitter

@boyvanamstel

@frankgroeneveld

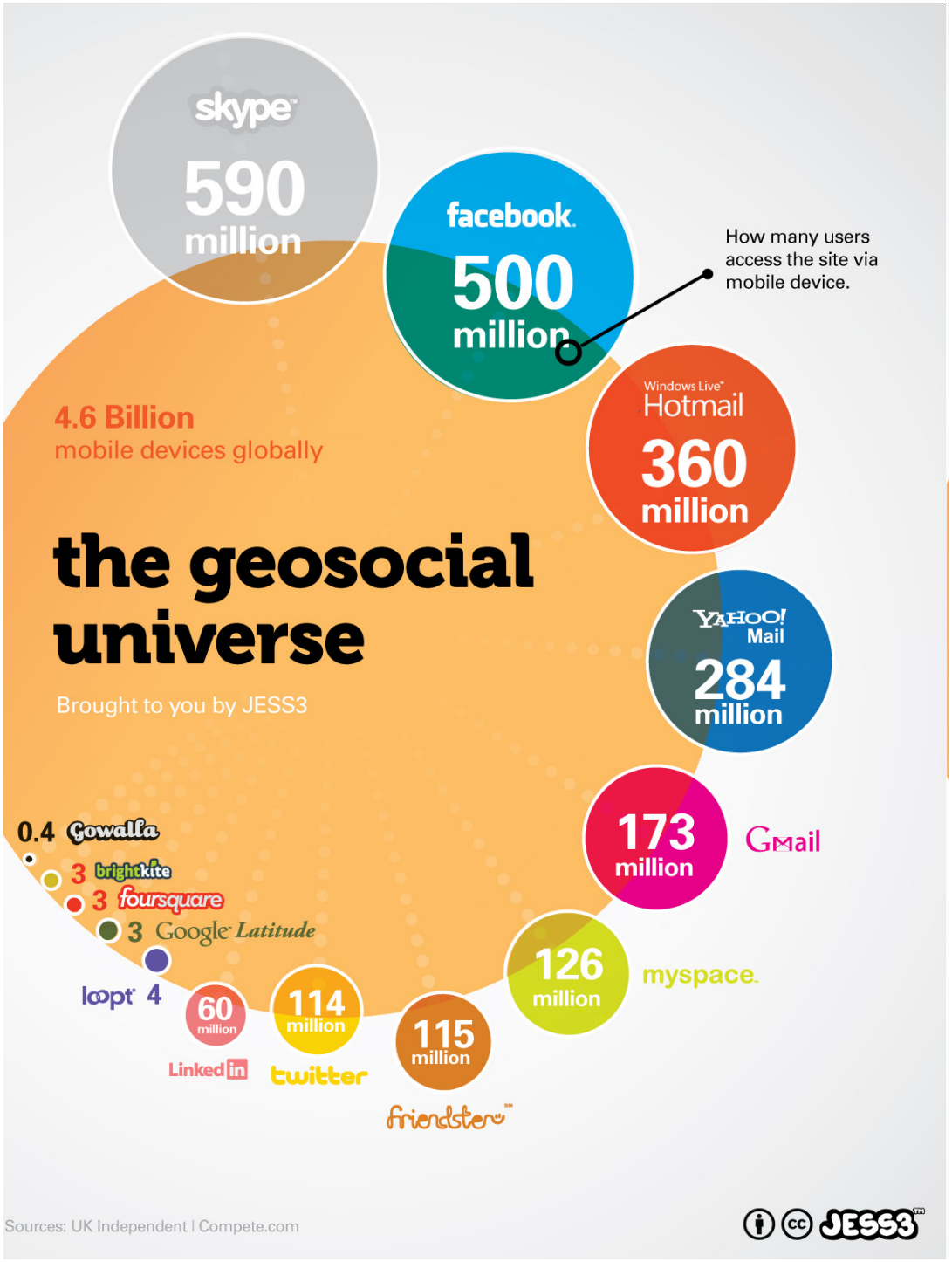
http://pleaserobme.com/

Merciless Memory:
The value of forgetting

Image from http://chronicle.com/blogs/brainstorm/professorial-drunkenness-dos-and-donts/29528

Pervasive surveillance and sousveillance has the potential to produce a society that never forgets - that has a permanent socio-spatial archive of trillions of events across a whole population, traceable through space and time; a detailed spatialisation of the history of everything, everywhere. Paradoxically everyware could well complicate life and introduce new technological hazards at the same time it seeks to make life simple and reduce risk…

Rob Kitchin & Martin Dodge. 2011. *Code/Space*. MIT Press



The Power/Politics of code

Representation

Participation

Geo-surveillance
& Sousveillance

Merciless Memory

“Which lines are drawn, how we draw them, the effects they have, and how they change are the interesting questions.”

J. Pickles *A History of Spaces (2004)*

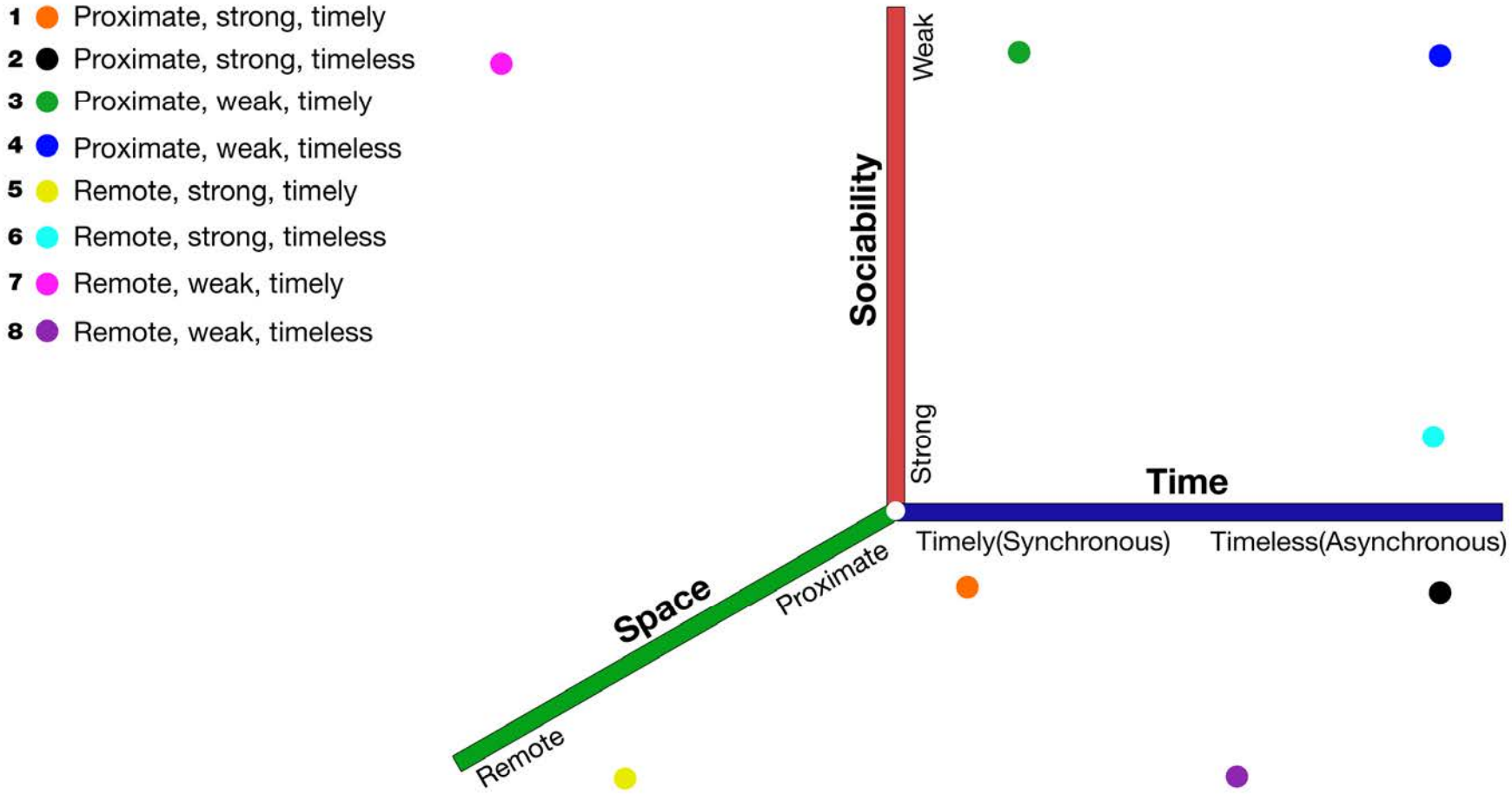
Space-Time-Sociability Context

Sociability	Strong		Weak	
Physical	Proximate	Remote	Proximate	Remote
Time				
Timely (Synchronous)				
Timeless (Asynchronous)				

Other possible complexity….

- Technology of interaction (F2F, analog, digital)
- Level of engagement
- Multiple networks of sociability

Space-Time-Sociability Context
(in 3D)



Space-Time Constraints of Social Networks: 8 Scenarios

Thanks to Dan Sui for the visualization of the idea in my position paper.

Fin