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Talk outline

1. Crowdsourcing
2. Vandalism
3. A study
4. Typology
5. Counter-vandalism

Crowdsourcing in geography

- Neogeography (Turner, 2006)
- Volunteered Geographic Information (Goodchild, 2007)
- GeoWeb (Haklay 2008)
- Crowdsourced cartography (Kitchin and Dodge, 2013)

The Commons

"Land or resources belonging to or affecting the whole of a community"

(OED)

"... the cultural and natural resources **accessible** to all members of a society, including natural materials such as air, water, and a habitable earth"   (Wikipedia)

Commons-based peer production

"collaboration among large groups of individuals . . . who cooperate effectively to provide information, knowledge, or cultural goods

without relying on either **market pricing** or **managerial hierarchies** to coordinate their common enterprise"

(Benkler and Nissenbaum, 2006)

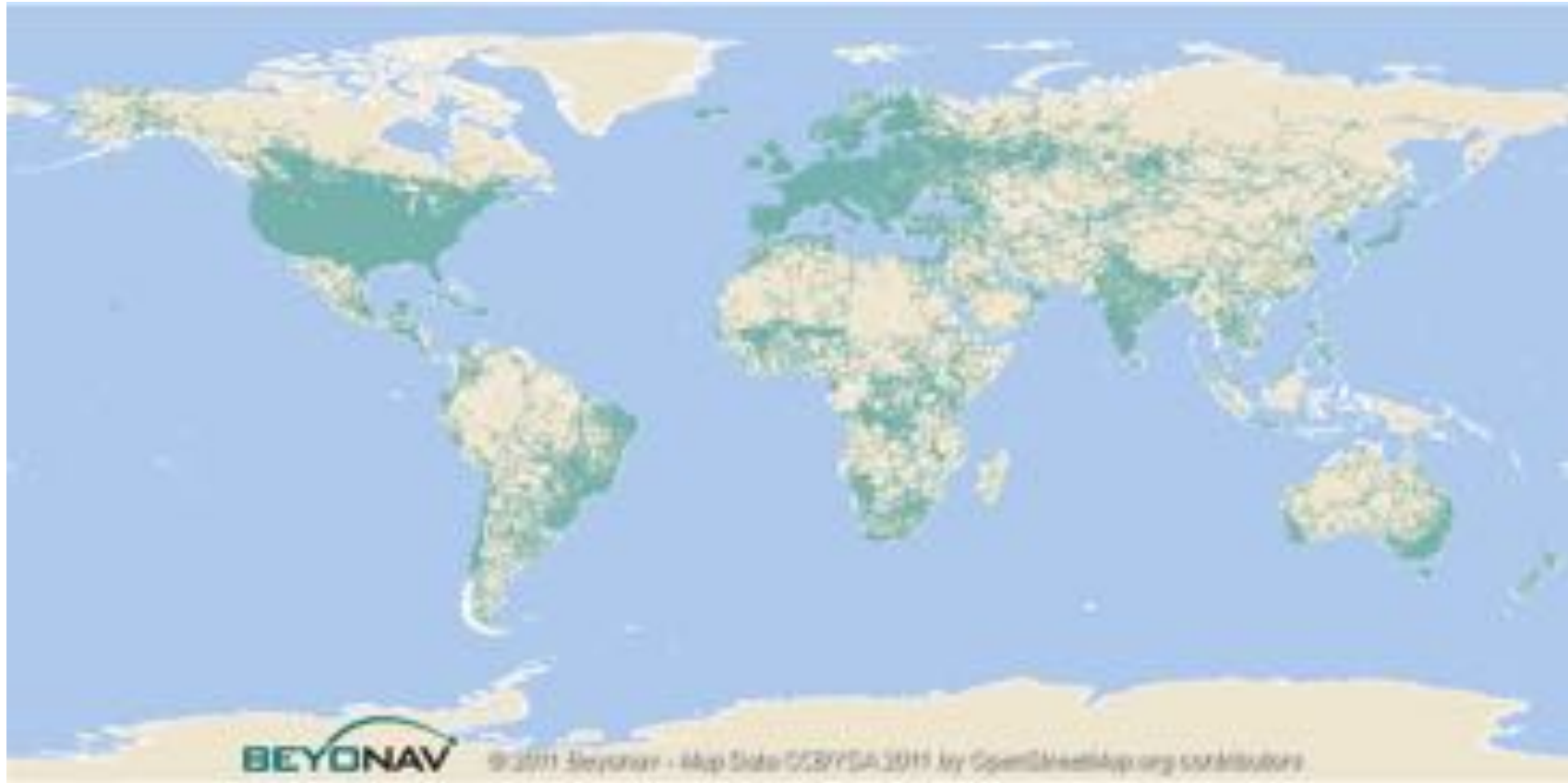**spatial@ucsb**
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Geographic digital commons

OpenStreetMap.org

- Started in 2004 by Steve Coast
- Map covering the entire planet
- ~creative commons license
- 1.6M contributors
- 2.6B points
- 260M lines/polygons

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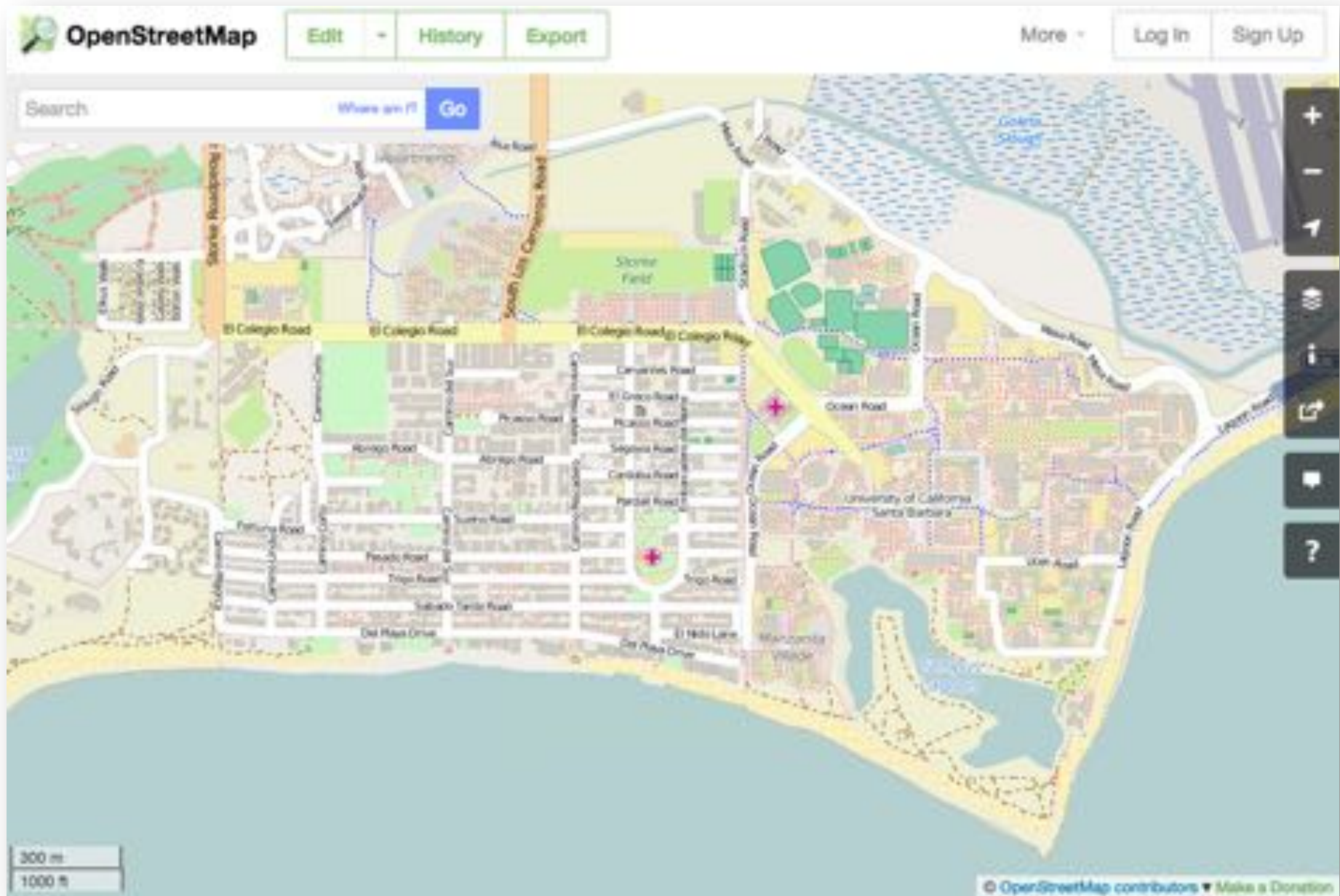CENTER FOR SPATIAL STUDIES

OpenStreetMap growth

Beyonav: http://www.beyonav.com/openstreetmap

MapBox Report: http://www.mapbox.com/osm-data-report/2013

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Editing OpenStreetMap

Editing OpenStreetMap
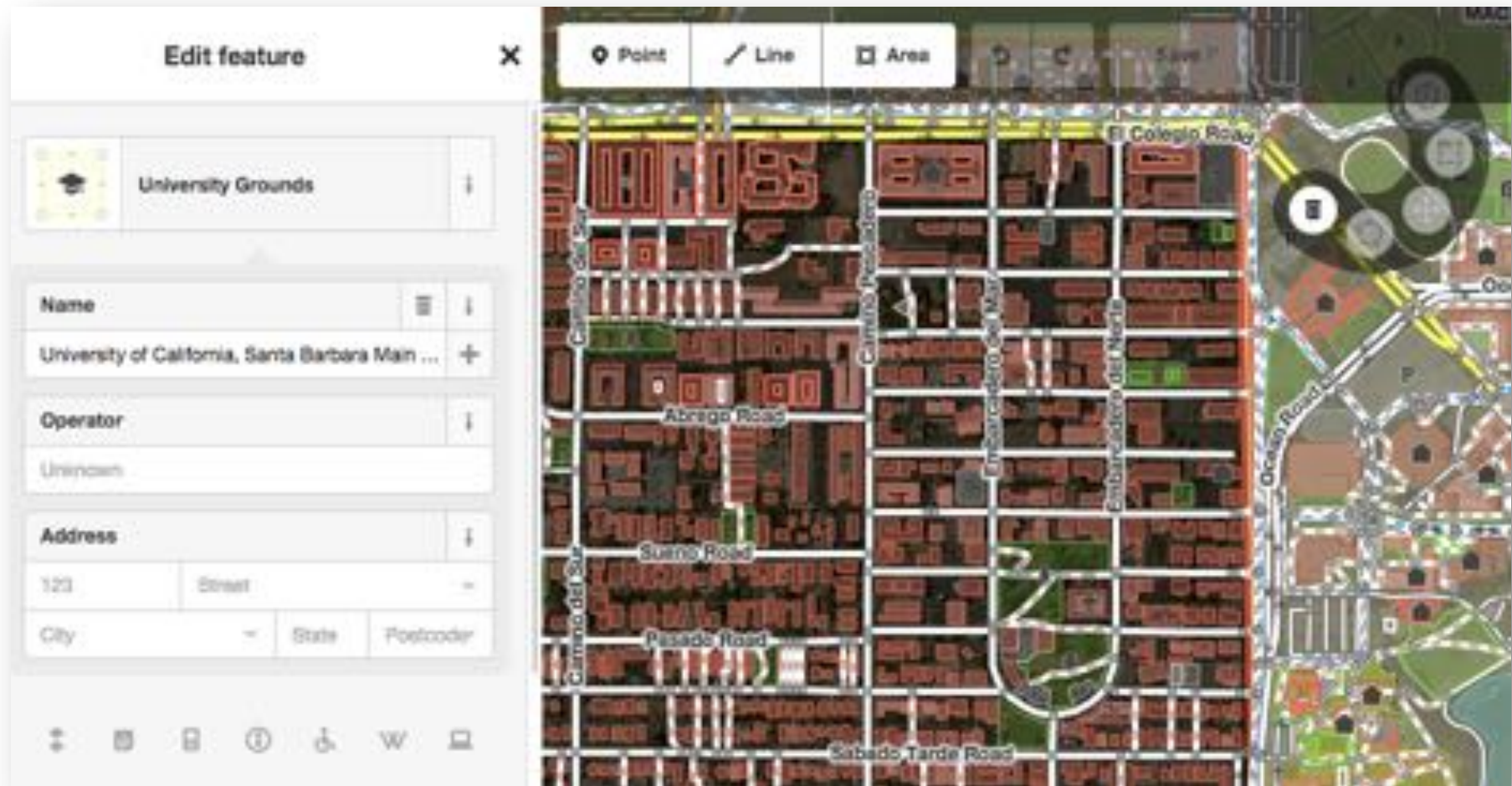
New forms of mapmaking

Centralized	Decentralized
Professional	Amateur
Top-down	Bottom-up
Closed	Open
Quality	**Quality?**

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Imperial
Maps,
Rome

(Minor, 1999)

The first vandalized map?

(Minor, 1999)

- Symbols of power
- "Map or be mapped"

British Empire, 1886
(wikipedia.org)

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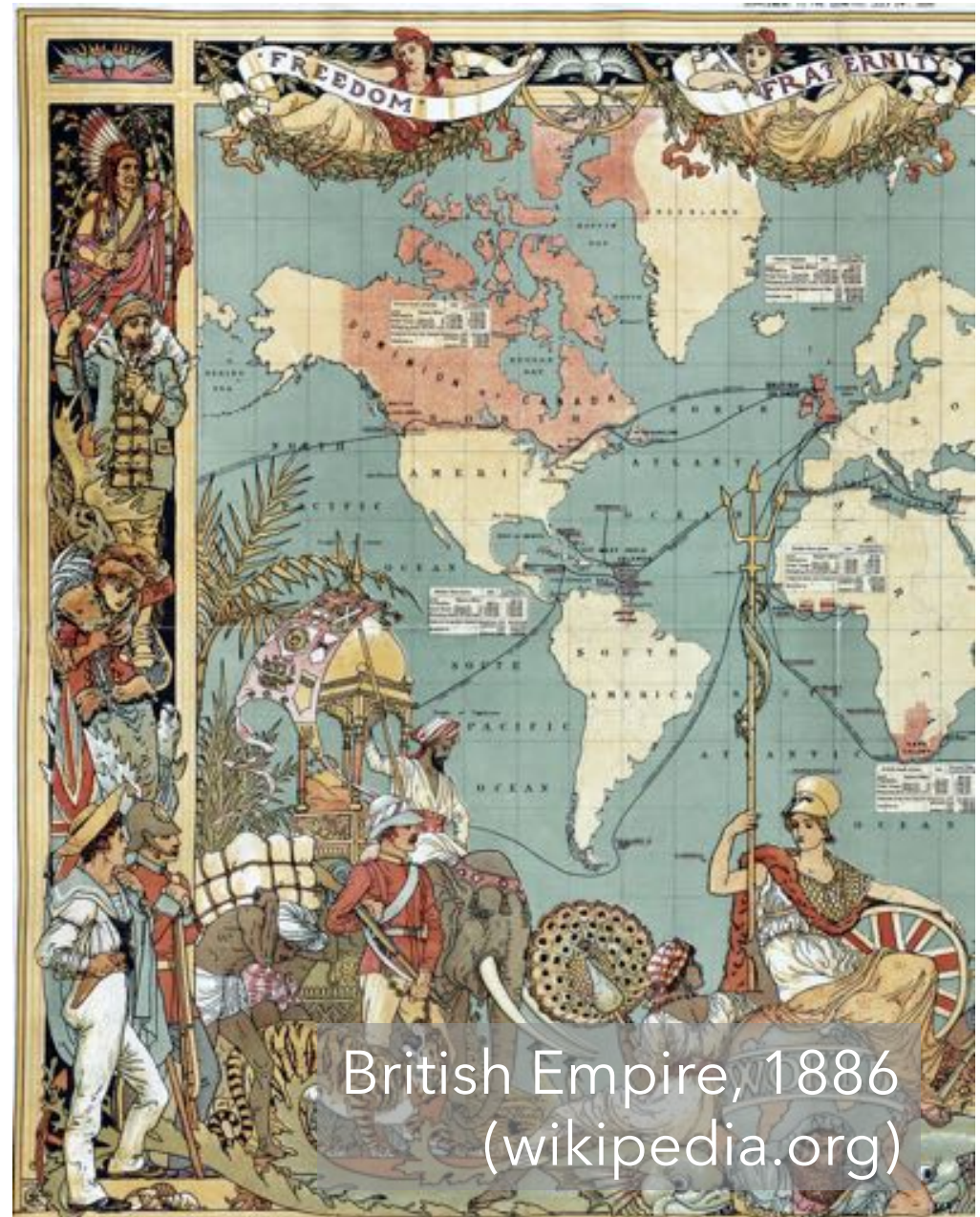
a form of **social communication**
between the offender and an
imagined or real audience

VANDALISM'S BAD

wikimedia.org

"Vandals
Spray Paint
*Santa Barbara
News*
Press Office"

dailynexus.org
Jan 7, 2015

Physical vandalism

- Destruction of physical artifacts
- Criminology, social psychology, sociology
- Wave of studies in 1970s/80s

wikimedia.org

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Vandalism theories

- Cohen's categories (1973)

- Aesthetic theory (Allen and Greenberger 1978)

- Social inequality (Fisher and Baron 1982)

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Mapping gang turf in Philly

(Ley & Cybriwsky 1974)

FIG. 7. Gang graffiti in the northwestern portion of Fairmount and vicinity.

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Digital vandalism

- Network sociality
- Online disinhibition effect (Suler 2004)
- Cyberbullying, trolling

www.marksanborn.com

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www.labour.org.uk 2003

Anonymous, 2015
#OpCharlieHebdo

Vandalism in Wikipedia

- High rewards, low risk
- Controversial topics
- Varying revert time

Vandalism in open maps

"Malicious edits are probably the least significant and will always exist" (Coast 2010)

Crowsourced maps are "wide open to attack" (TomTom newsletter, 2012)

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Poisonous people

'disinfection' of the project from 'poisonous people' who "drain, paralyse, slow, cause needless infighting and destroy the attention and focus of a community . . .

[they] are wrecking the time, focus and goodwill of the majority of contributors, creating dissent out of nothing and even purposefully breaking our data"

(Coast, 2010)

Cartographic vandalism

Intentional reduction of the **utility** of a geospatial artifact for the majority of its users

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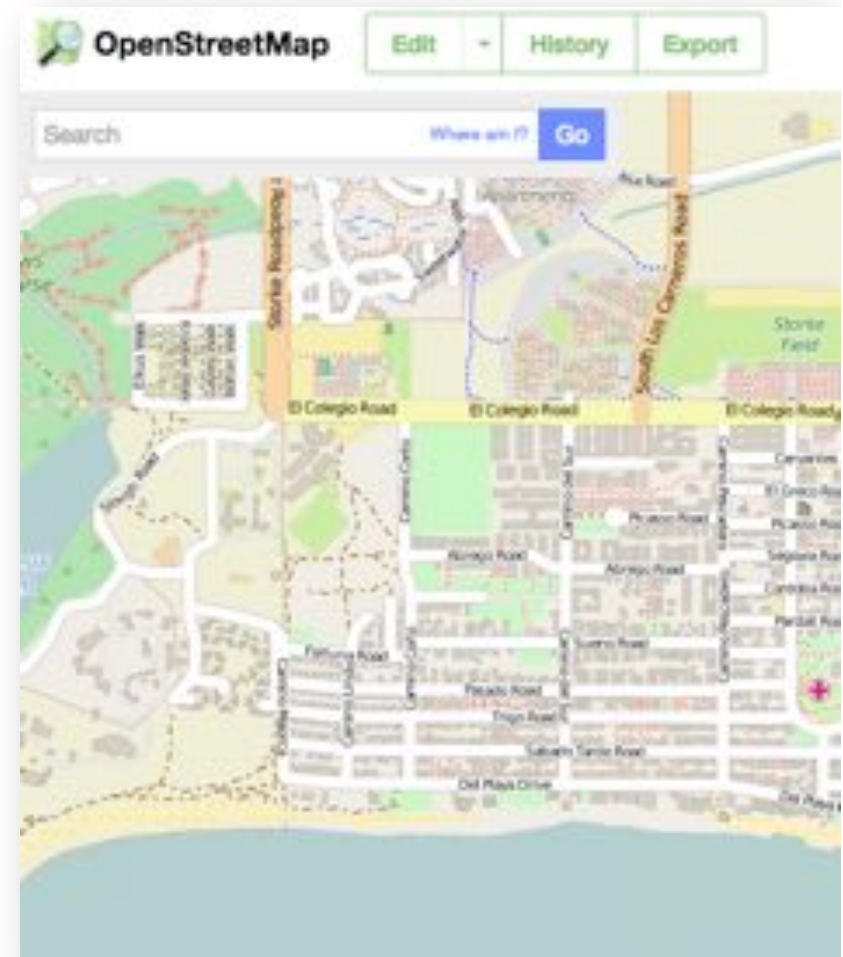
A qualitative study

- ~900 threads in forums/mailing lists
- 2004–2013
- Reported incidents

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A typology of carto-vandalism

Play

Ideological

Fantasy

Artistic

Industrial

Carto-spam

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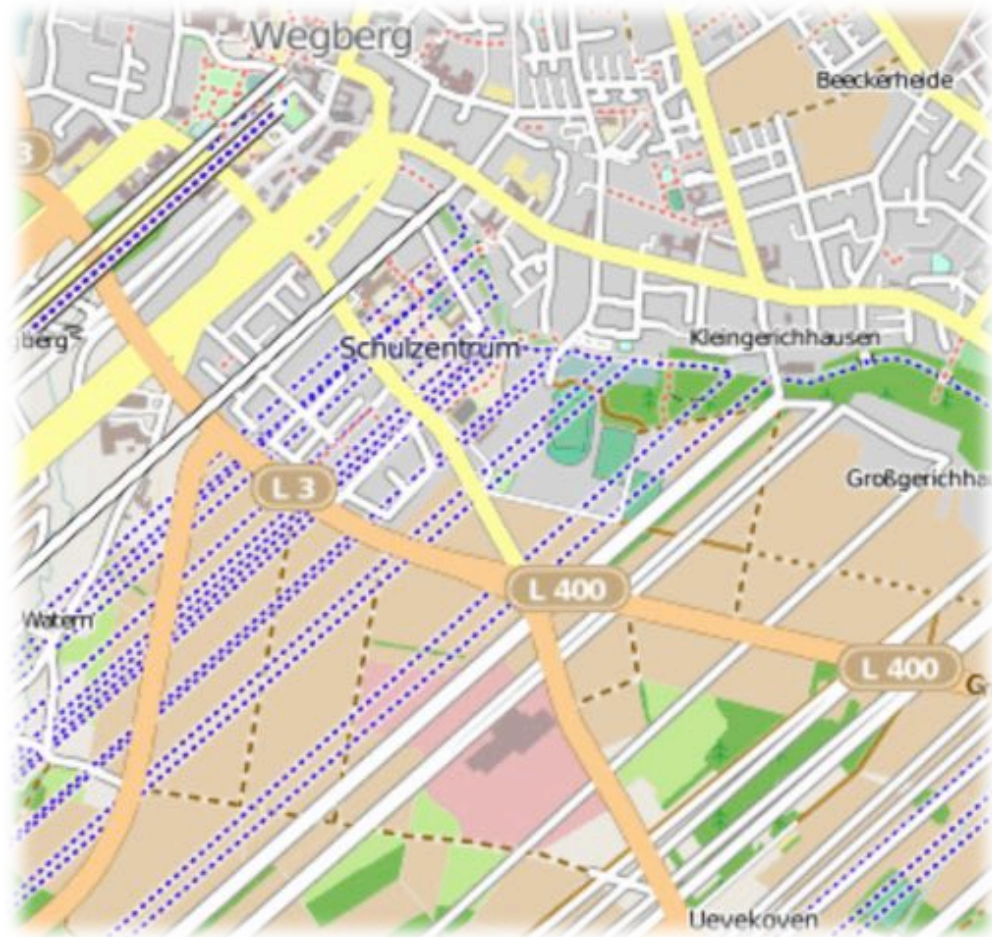CENTER FOR SPATIAL STUDIES

Play carto-vandalism

- Removals, distortions, renaming
- Unclear motivation and intentionality
- ~School vandalism

Damage to OpenStreetMap

Ideological carto-vandalism

- Political, religious, or ethnic conflicts
- Cyberwarfare
- Conflict zones and contested borders
- Symbolic places
- ~Political graffiti

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Ideological carto-vandalism

Syrian Civil War on WikiMapia

- Removed military targets

- Messages against Alawites ("animals")

- Qardaha renamed as "home to monkeys"

(Aleppo 2012, cnn.com)

Ideological carto-vandalism

- **Toponym disputes** in Jerusalem (Arabic/Hebrew) and Crimea (Russian/Ukrainian)

- Pro-government **propaganda** during Arab Spring in Bahrein in historical descriptions

- Real wars become "tag wars"

Fantasy carto-vandalism

- Pleasure of creating imaginary places (Joliveau 2009)

- "Trap streets" (Monmonier, 1996)

- Fake names in OSM ended up in Apple Maps (Moore, 2013)

- Fictional towns in OSM ("Lummerland", "Parfaiteville")

Fantasy Town in OSM

West Harrisburg

Artistic carto-vandalism

- Vandalism as art
- Drawing on the planet (Nazca lines)
- GPS art (1990s)

Banksy's graffiti

"It is not down in any map;
true places never are" (Melville, 1851)

"Meridians" http://www.gpsdrawing.com/gallery/land/meridians/meridians2.html

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Artistic carto-vandalism

- "Polygon art" in WikiMapia
- Drawing with mapping tools
- Hacking

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WikiMapia Polygon Art Exhibition Area

Industrial carto-vandalism

Mocality Affair (2012)

Carto-spam

- Opinion spam
- OSM: misuse of *tourist=attraction*
- WikiMapia: "Joe's shoe repair shop - www.joeshoefix.com"

fourdots.co

www.dreamstime.com

Countering vandalism

- **Prevention (*ex-ante*)**
- **Punishment and repairs (*ex-post*)**
- **Environmental design and architecture**

trueform.co.uk

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Countering wiki-vandalism

- Community involvement (informal)
- Volunteered community policing (formal)
- Clearly defined groups and policies (Kittur et al. 2009)

wikipedia.org

Countering carto-vandalism

- **OSM**: Data Working Group, local solutions
- **WikiMapia**: gamification, experience points
- Policing
- Banning
- Sockpuppets

www.utecwv.net

Countering carto-vandalism

- Urban/rural divides
- "Tyranny of place"
- False positives in WikiMapia, e.g.:

"HELP! I have been falsely banned as a clone."

The moderator replied:

"apparently you edited a few tags that were touched by a known vandal"

Automated solutions

- Research mainly on Wikipedia
- Rule-based vs machine learning
- OSMPatrol (Neis et al. 2012)
- User reputation
- Ever-evolving spam techniques
- **No silver bullet!**

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Designing out vandalism

- Prevention
- Design of editing tools
- Sandboxing!
- Multiple viewpoints
- Ethnographic studies
- Dataset of incidents

lowes.com

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- Tragedy of the Digital Commons? (Adar and Huberman 2000)

- Governance, self-regulation, policy

- Risk of under-use

- Long-term sustainability

Image: nivekronnoco.blogspot.com

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Thanks!

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Ballatore, A. (2014). *Defacing the map: Cartographic vandalism in the digital commons.*
The Cartographic Journal