Mapping the movement of active guardians in time and place

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Crowdsourced data (through web/apps) can represent the presence of people actively monitoring their environments, potentially acting as capable intervening guardians.
CROWD SOURCING

HOW THE POWER OF THE CROWD IS DRIVING THE FUTURE OF BUSINESS

JEFF HOWE
Harnessing information and skills from large crowds into one collaborative project.
Welcome to Wikipedia,
the free encyclopedia that anyone can edit.
5,406,640 articles in English

From today's featured article

Edward III (1312–1377), King of England from 1327 until his death, restored royal authority after the unorthodox and disastrous reign of his father, Edward II. Edward III transformed the Kingdom of England into one of the most formidable military powers in Europe. His reign of fifty years, the second longest in medieval England, saw vital developments in legislation and government—in particular the evolution of the English parliament—as well as the ravages of the Black Death. Edward was crowned at age fourteen after his father was deposed by his mother, Isabella of France, and her lover Roger Mortimer. At age seventeen he led a successful coup against Mortimer, the de facto ruler of the country, and began his personal reign. After a successful campaign in Scotland he declared himself the rightful heir to the French throne in 1337, but his claim was denied, starting the Hundred Years' War. Following some initial setbacks the war went well for England; victories at Crécy and Porrers led to the favourable Treaty of Brétigny. Edward's later years were marked by international failure and domestic strife, largely as a result of his inactivity and poor health. (Full article...)

Recently featured: Apatosaurus • The Magazine of Fantasy & Science Fiction • John Gielgud

Did you know...

- that the McLoughlin Promenade (pictured) sits on a bluff in Oregon that was occupied by the Molala people thousands of years before the arrival of settlers of European ancestry?
- that Max Thurn, who founded the NDR Chor in 1946, conducted a series of Bach cantatas and prepared the choir for performances at the Peace Festival in Locarno, Switzerland?

In the news

- Salvador Sobral (pictured), representing Portugal, wins the Eurovision Song Contest with the song "Amar pelos dois".
- A large-scale cyber attack involving ransomware causes severe disruption around the world.
- At least 28 people are killed in Mastung, Pakistan, in a suicide attack targeting Abdul Chafoor Haideri, a Senate Deputy Chairman.
- The Free National Movement, led by Hubert Minnis, wins the Bahamian general election.
- Remains of Homo naledi are dated to the Middle Pleistocene, suggesting coexistence with early Homo sapiens.
- Moon Jae-in is elected President of South Korea.
- Ongoing: Battle of Mosul • Venezuelan protests

Recent deaths: Ian Brady • Mark Colvin • Qian Qichen

May 17

- 1395 – An outnumbered Wallachian army repels an Ottoman invasion force in the Battle of Ruse.
- 1590 – Anne of Denmark (pictured) was crowned Queen consort of Scotland in the abbey church of Holyrood Palace.
- 1914 – Albania officially recognizes the area of Northern Epirus as an autonomous region within the state of Greece.
Find your inspiration.

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Everyone's photos
Measure of ambient population

The impact of using social media data in crime rate calculations: shifting hot spots and changing spatial patterns

Nick Malleson & Martin A. Andresen

To cite this article: Nick Malleson & Martin A. Andresen (2014) The impact of using social media data in crime rate calculations: shifting hot spots and changing spatial patterns, Cartography and Geographic Information Science, 42:2, 112-121, DOI: 10.1080/15280842.2014.909754

To link to this article: http://dx.doi.org/10.1080/15280842.2014.909754

Published online: 10 Apr 2014.
What are people doing when they are generating these data?
Report, view, or discuss local problems

(like graffiti, fly tipping, broken paving slabs, or street lighting)

Enter a nearby UK postcode, or street name and area:

e.g. 'B2 4QA' or 'Tib St, Manchester'

- or locate me automatically

How to report a problem

1. Enter a nearby UK postcode, or street name and area
2. Locate the problem on a map of the area
3. Enter details of the problem
4. We send it to the council on your behalf

Recently reported problems

- Burned out moped on the grass area in the park
  - 15:43 today

- Flytipping
  - 15:40 today

- Overweight walker alert
  - 15:36 today
Graffiti

Reported via iOS in the Graffiti category anonymously at 16:49, Monday 11 May 2015
Sent to Camden Borough Council less than a minute later

On posts surrounding playground and in roundabout. Obscene in a children’s play area. Urgent!!!

UPDATES

Questionnaire filled in by problem reporter
Posted anonymously at 11:53, Tuesday 9 June 2015, marked as fixed
“...over flowing rubbish, street drinkers, litter in the street and rats.”
Why guardianship?
Question: Are people reporting on neighbourhood-monitoring apps active guardians?
90-9-1 Ratio
All large-scale, multi-user communities, social networks

1% Heavy Contributors
9% Occasional Contributors
90% Lurkers

95-5-0.1 Ratio
Weblog Users

0.1% Heavy Contributors
5% Occasional Contributors
95% Lurkers

99.8-0.2-0.0003 Ratio
Wikipedia Users

0.0003% Heavy Contributors
0.2% Occasional Contributors
99.8% Lurkers

(c) Visual Liberation
Top 1%
Top 0.1%
## Top 1% number of categories

<table>
<thead>
<tr>
<th>Min.</th>
<th>Median</th>
<th>Mean</th>
<th>Max.</th>
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<td>6</td>
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*n = 21, prop = 4%
Super contributors are local
Do the FMS active guardians have a preventative effect on burglary?
Willingness to intervene

FMS

Ambient population

Burglary
Change between day and night time

- Increase
- No change
- Decrease

Active Guardians

Population
### Table 5.1: Model 1: Willingness to intervene in neighbourhood vs burglary rate

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Probability</th>
<th>Log likelihood</th>
<th>AIC</th>
<th>SC</th>
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<tr>
<td>Willingness to intervene</td>
<td>-0.068</td>
<td>0.001</td>
<td>-5825.86</td>
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### Table 5.2: Model 2: Willingness to intervene and daytime population change in neighbourhood vs burglary rate

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### Table 5.3: Model 3: Willingness to intervene and daytime population change and active guardianship change in neighbourhood vs burglary rate

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### Table 5.4: Model 4: Willingness to intervene and active guardianship change in neighbourhood vs burglary rate

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Conclusions

• Can crowdsourced environment monitoring data represent movement of active guardians?
  – Maybe…
• Biases to be considered
• Repeat study with more granular crime data
• In-depth exploration of super-guardian behaviour
Thank you!
Questions / comments?
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