I’m feeling lucky!

Applying Google Maps and Google Street View in environmental criminological research

Christophe Vandeviver

t. +32 9 264 97 16
f. +32 9 264 84 94
e. Christophe.Vandeviver@UGent.be

October 10, 2013
Technology impacts our daily lives

For the good, the bad and the criminologist?
• Friends, likes, tweets and check-ins
• “It is probable that the most deadly and the most demoralizing single instrumentality of present-day civilization is the automobile.” (Park et al., 1925, p. 107)
• “Google Street View is a great tool for thieves” (Belgian Federal Police in De Tijd, 24/11/2011)

Google Maps and Google Street View as a tool for environmental criminological research!? 
Possible applications in criminology

Test hypothesis related to Google Maps
- Target selection process of burglars

Re-asses established theories and common practices in research
- Offenders’ awareness space

Time-saving tool in data collection phase
- Charting the built environment
1. Test hypothesis related to Google Maps (1)

Is Google Street View really “a great tool for thieves”?

Target selection process

- Characteristics of built environment and individual house
- Typically observed in situ during day-to-day activities or reconnaissance
- GM & GSV might facilitate reconnaissance
- But GM & GSV have their limitations (e.g. GSV-imagery is dated)

Uncharted criminological territory!

- Experiment with criminology students
  - Select a suitable burglary target
  - Several methods of target selection
1. Test hypothesis related to Google Maps (2)

No spontaneous use of GM & GSV
- 2 of 18 participants (11.11%) in group 1 spontaneously used GM & GSV
- Photo requirement reduces added value of GM & GSV

Previously established awareness of opportunities guides use of GM & GSV
- GM & GSV facilitates reconnaissance
  - Targets are selected from familiar houses
  - GM & GSV are used for double-checking
- Added value of GSV is questioned because of ‘quality of imagery’

Conclusion
- Unlikely burglars use GM & GSV
- But ... more research is needed
1. Test hypothesis related to Google Maps (3)

Straightforward example, but opens up new perspectives

• E.g. recruit (ex-)burglars and redo experiment

For full article on GM and burglary target selection see

2. Re-asses theories & practices (1)

Does Google Maps expands offenders’ awareness space?

• Facebook altered stalking patterns (Pratt et al., 2010)
• Internet changed consumer fraud (Buhi et al., 2009)

Awareness space shapes criminal mobility patterns

• AS is established during (non-)criminal day-to-day activities
• GM & GSV can expand AS
• AS is measured using shortest journey to crime distance

Experiment with criminology students

• 5 activity nodes, incl. legal home and actual home
2. Re-asses theories and practices (2)

Average distance to nearest node (incl. residences) per group

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Distance (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street</td>
<td>1.78</td>
</tr>
<tr>
<td>Online, w/ photo</td>
<td>0.54</td>
</tr>
<tr>
<td>Online</td>
<td>8.42</td>
</tr>
</tbody>
</table>

Mean distance in km:

\[ F = 4.868; \text{df} = 2; \text{p} = 0.011 \]
2. Re-asses theories and practices (3)

Using GM & GSV to re-asses existing criminological theories

• ... and scrutinize common (mis-)practices in criminological research (e.g. home as starting point in journey to crime research)

Full article currently under review

• Van Daele, S. & Vandeviver, C. (under review). Let me Google that for you! Awareness space and the journey to crime in the information era.
Is Google Street View useful for collecting environmental data?

- Applying Google Earth in archeology (e.g. Kennedy, 2011)

If burglars use Google Street View for casing, researchers could use Google Street View to collect data on built environment as well

Has been applied successfully in health studies

- e.g. Badland et al. 2010; Clarke et al. 2010; Rundle et al. 2011
- Results look promising for criminology!
3. Save time during data collection (2)

Reliable measures through GSV

Cost- and time-effective
• Eliminates need for travel and on-site visit
• Re-visit study area when additional information is needed

Opens up perspectives for comparative international research
• Similar imagery in different settings
• ‘World at your fingertips’

Limitations
• Time lapse between date of GSV image and time of study
• Quality of GSV imagery
• Qualitative assessments difficult
Google Maps and Google Street View in environmental criminological research!

- Source of societal concern but also ideas for criminological research
- Inspiration for re-visiting criminological theories
- Tool for data collection

What about other strands of criminological research

- Limited to quantitative methods (cf. Clarke et al. 2010, p. 1228)?
- Application outside of environmental criminology?
References


Contact Speaker

Christophe Vandeviver

t. +32 9 264 97 16
f. +32 9 264 84 94
e. Christophe.Vandeviver@UGent.be

IRCP

Ghent University
Universiteitstraat 4
B – 9000 Ghent