UNIVERSITY OF TWENTE.

Situational prevention of cybercrime

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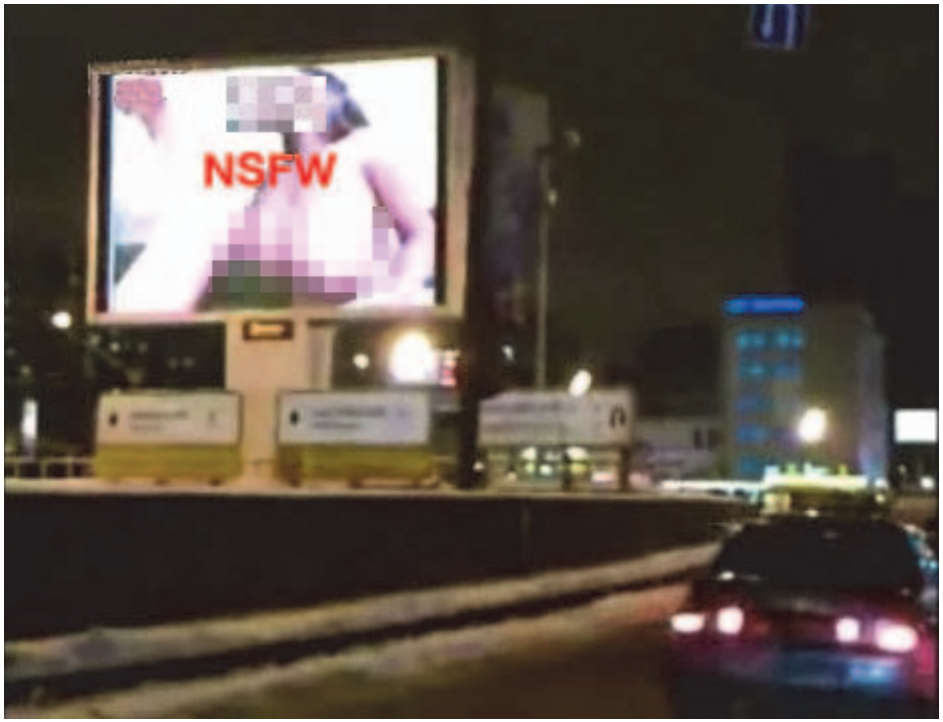
Queensland hacker jailed for revenge attacks

Russian hacker jailed for porn on video billboard



Armenian botnet herder sentenced for Bredolab

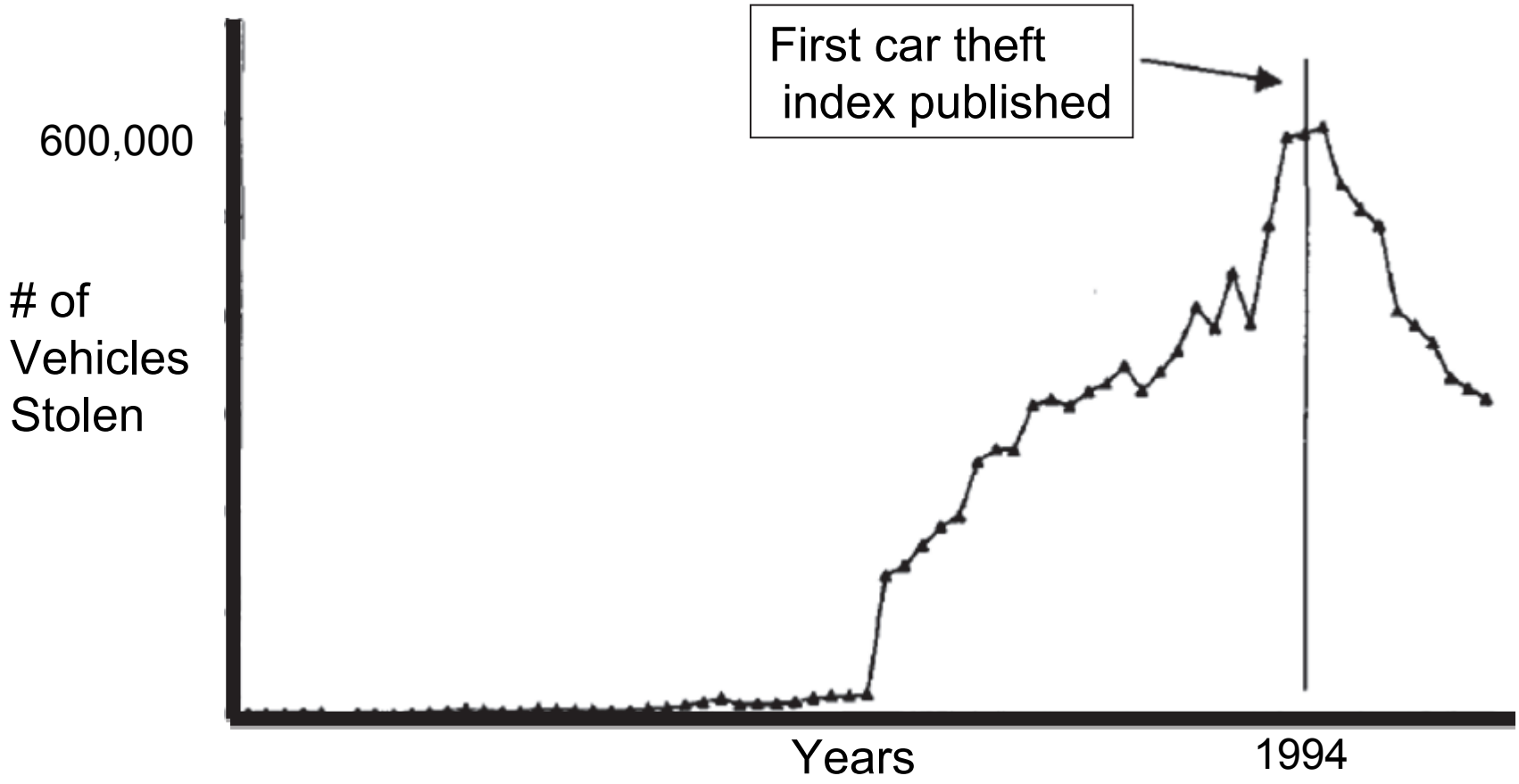
Does “Cyber” create opportunity?

Opportunity makes the thief

Five principles of opportunity reduction

- Increase effort
- Increase risks
- Reduce rewards
- Reduce provocation
- Remove excuses

Example of opportunity reduction: Increase effort by installing better locks



G. Laycock. (2004) The UK car theft index: An example of government leverage. In Understanding and Preventing Car Theft, pp 25-44. Criminal Justice Press, NY.

Systematic literature survey opportunity reduction

- Computer *and* Behavioural science

- Situational prevention of cybercrime unexplored
- Anti-phishing research most developed

P. H. Hartel, M. Junger, and R. J. Wieringa. Cyber-crime science = crime science + information security. Technical Report TR-CTIT-10-34, CTIT, University of Twente, Oct 2010. http://eprints.eemcs.utwente.nl/18500/.

Does opportunity reduction work for “cyber”?

Three case studies focusing on aspects of “cyber” enabled traditional crime:

- Digital Modus Operandi
- Online Social Sports
- Social engineering keys

Case study 1: Digital Modus Operandi

- Previous studies: 1% cyber crime
- Our study: How much “cyber” is there?
- Analysis of 809 police files from 2012

More “cyber” than expected: 20%

Cases	Residential Burglary N=135	Commercial Burglary N=141	Threat N=260	Fraud * N=273
No ICT	97%	100%	84%	59%
ICT	3%	0%	16%	41%

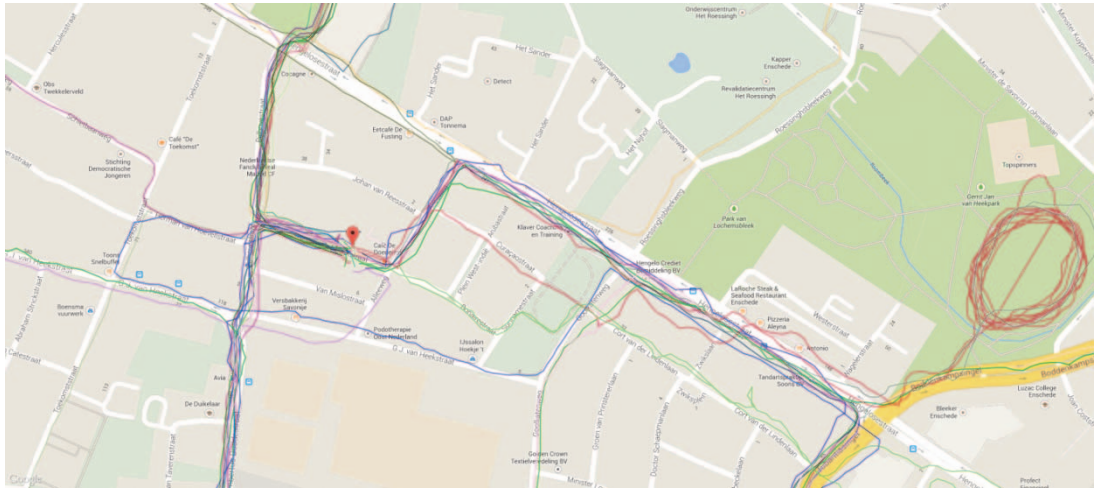
A. L. Montoya Morales, M. Junger, and P. H. Hartel. How 'digital' is traditional crime? In European Intelligence and Security Informatics Conference (EISIC), Uppsala, Sweden, Aug 2013. IEEE Computer Society.

“Cyber” crime less organised than expected

Fraud suspects	No ICT N=144	ICT N=73
Working alone *	79%	95%
No criminal record	81%	78%
Paid job	16%	27%
Born locally *	72%	96%

Case study 2: Online Social Sports

- Targets often disclose their address on OSN
- How much worse is this for Social Sports?
- Analyse 513 RunKeeper profiles



“Cyber” causes more disclosure than expected

Located homes	Males * N=313	Females * N=107	30- * N=265	31+ * N=118
FaceBook +	13%	10%	12%	17%
RunKeeper	36%	41%	36%	31%

Case study 3: Social engineering keys

- 213 rooms in large university building
- Does a simple intervention help?
- 27 master students visited 74 rooms with one or more researchers

Intervention has more effect than expected

Social engineering attempts *	Give key N=37	Keep key N=37
With key fob	38%	62%
Without	62%	38%

Conclusions

- Cyber normalizes volume crime
- Social Engineering is a key issue
- Does opportunity reduction work for “cyber”?
- Research partners needed