Armitage, Rachel

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Reducing Crime through Secured by Design: A Systematic Review

Dr Aiden Sidebottom
Prof Rachel Armitage
Dr Lisa Tompson
Outline

• The rise of evidence-based policing

• What Works Centre for Crime Reduction

• EMMIE and the Crime Reduction Toolkit

• A systematic review of SBD: initial findings and knowledge gaps

• Early conclusions and future directions
On evidence-based policing

- No crime reduction measure works everywhere

- Budgetary pressures demand judicious use of available resources

- Decisions about how to reduce crime should be informed by the best available evidence on “what works” combined with tacit knowledge and experience

- Considerable investment by UK Government in “what works” centres including What Works Centre for Crime Reduction
Requirements for evidence-based policing

• Research evidence needs to exist

• Research evidence needs to be trustworthy

• Research evidence needs to be accessible

• Research evidence needs to be practically relevant

• There needs to be appetite among practitioners and policymakers to locate and act on research evidence
What Works Centre for Crime Reduction
EMMIE: What decision-makers need to know

**Effects** found (did it work?)

**Mechanisms** producing effects (how did it work?)

**Moderators** influencing effectiveness

**Implementation** considerations

**Economy** (costs and returns on investment)

Locating and grading the evidence base

- Inclusion criteria
  - Only systematic reviews or meta-analysis
  - Must have crime reduction outcome measure
  - Focused on a single intervention

- Graded using EMMIE

- Brief narrative summary

- ~17,000 studies
  - 838 studies
  - 337 studies
  - 82 studies
Academics can be direct

Can apparent superluminal neutrino speeds be explained as a quantum weak measurement?

M V Berry$^1$, N Brunner$^1$, S Popescu$^1$ and P Shukla$^2$

$^1$ H H Wills Physics Laboratory, Tyndall Avenue, Bristol BS8 1TL, UK
$^2$ Department of Physics, Indian Institute of Technology, Kharagpur, India

Received 12 October 2011, in final form 27 October 2011
Published 11 November 2011
Online at stacks.iop.org/JPhysA/44/492001

Abstract
Probably not.

PACS numbers: 03.65.Ta, 03.65.Xp, 14.60.Pq
# Crime Reduction Toolkit

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Impact on crime</th>
<th>How it works</th>
<th>Where it works</th>
<th>How to do it</th>
<th>What it costs</th>
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**Key**

- Quality of evidence:
  - No information
  - Limited quality
  - Moderate quality
  - Strong quality
  - Very strong quality

**Filters**

- Impact on Crime
  (select a range using the markers below)
Street lighting

What is the focus of the intervention?
Improved street lighting is a form of situational crime prevention that involves increasing the levels of illumination on the street or in other public spaces. It is intended to serve many purposes, including accident prevention, marketing and the reduction of crime. This review covers crime reduction only.

This narrative is primarily based on one systematic review covering 13 studies.

EFFECT
How effective is it?
Overall, the evidence suggests that the intervention can reduce crime. Across the 13 studies reviewed, both violent and property crime was reduced by an average of 21 per cent in areas with improved street lighting compared to areas without.

There were no studies for which a statistically significant backfire effect (where crime increased) was reported.

How strong is the evidence?
The review was sufficiently systematic that most forms of bias that could influence the study conclusions can be ruled out. However, it is worth noting that the comparison areas used to estimate the impact of improved street lighting in the primary evaluations were sometimes adjacent to the areas in which street lighting was improved. The authors of the review note that this could have affected the estimates of the impact of intervention. There may, for example, have been a displacement effect or a diffusion of benefits.
Objectives of this systematic review

1. Review the evidence on whether SBD is an Effective crime reduction method

2. Identify the Mechanisms through which SBD is expected to reduce crime and the Moderators that influence the effectiveness of SBD

3. Summarise information on the Implementation and Economic costs of SBD (not discussed today)
Search strategy

• A keyword search of 8 electronic databases

• A keyword search of reports published by government, research and professional agencies

• Forward and backward searches of evaluation studies

• Hand search of relevant journals not included in databases

• Consultation with SBD experts
Inclusion criteria

1. SBD (excluding CPTED and related concepts)

2. Study takes place in UK (outgrowths of SBD noted)

3. Study published after 1989

4. Study published in English
Search results

• 331 studies initially identified (including duplications)

• 132 studies screened for eligibility

• Presently 27 studies judged eligible

• 7 studies with quantitative data on the effectiveness of SBD
## SBD impact evaluations

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<th>Author</th>
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<td>Armitage &amp; Monchuk</td>
<td>2011</td>
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<td>Teedon et al</td>
<td>2012</td>
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<td>Jones et al</td>
<td>2016</td>
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Characteristics of evaluation studies

- Combination of refurbished estates and new properties built to SBD standards (some studies examined both)

- Evaluations of new-build housing use a *matched-pairs* design, here the matching process is critical

- Social housing predominates

- Data differences: police recorded crime and resident surveys

- Crime is rare and the problem of small numbers
Effect: SBD new-builds using burglary data
**Effect: refurbishments using burglary data**

- **Teedon et al. (2012) - Glasgow**
  - Doors and windows
  - 2,028 SBD dwellings vs 12,157 non-SBD dwellings
  - Reductions in burglary but small numbers (18 to 7)

- **Jones et al. (2016) – Nottingham**
  - Just windows
  - Significant reductions in burglary observed in treatment and control groups, albeit larger in SBD dwellings
Unintended consequences
Unintended consequences: Spatial displacement

- Enduring criticism of situational crime prevention
- Strong evidence to reject displacement hypothesis
- No SBD evaluations provide a reliable assessment of spatial displacement (or diffusions of benefits)
- Reasons include the nature of evaluation (new-builds), cost of evaluation, suitable buffer zone
What mechanisms explain the patterns observed?

• Target hardening measures are assumed to work via:
  – Increasing the effort
  – Increasing the risk

• MO patterns provide suggestive evidence (Armitage, 2004; Jones et al. 2016)

• Less is said about the wider environment design associated with SBD:
  – Increasing the risk through increased natural surveillance
  – ‘Broken windows’ – maintaining an ordered, cared-for environment thereby deterring prospective offenders

• All mechanisms are context-sensitive, but some are more context-sensitive than others

• ‘the biggest challenge now is to identify what parts of the [SBD] scheme are having the desired effects’ (Topping & Pascoe, 2000)
Initial conclusions and a call for action

- Available evidence indicates that new-build SBD estates experience significantly lower burglary rates than comparable non-SBD estates.

- More to follow on what the evidence says about cost-effectiveness.

- Many SBD evaluations are now dated, based on small numbers and were conducted retrospectively.

- Limited evidence on the mechanism(s) responsible for the observed effects.

- Future evaluations using EMMIE should combine input from practitioners and researchers at the outset.

- Any other SBD impact evaluations? If so, tell us.
References and web links

What Works Centre Crime Reduction Toolkit
http://whatworks.college.police.uk/toolkit/Pages/Toolkit.aspx


Sidebottom, Aiden, Lisa Tompson, Amy Thornton, Karen Bullock, Nick Tilley, Kate Bowers, Shane D. Johnson (2016). Gating alleys to reduce crime. Available at:
http://whatworks.college.police.uk/About/Documents/Alley_gating.pdf