

Designing Products Against Crime

A Think Thief Orientation

**DESIGN
AGAINST
CRIME**



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What is Design Against Crime?

DAC uses the tools, processes & products of design to work in partnership with agencies, companies, individuals and communities to

- prevent all kinds of **crime** – including antisocial behaviour, drug abuse/ dealing and terrorism
- promote quality of life & sustainable living through enhanced **community safety**

through designs that are 'fit for purpose' and contextually appropriate in all other respects

...and DAC can be quirky too



Scope of Design Against Crime

- Secure products
- Security products
- Security components
- Security features/ furniture
- Secure systems
- Secure information
- Security communication/ art
- Secure clothing
- Secure places/ environments
- Secure communities

Design is about *processes*, not just products!

Inherently secure product



Hard or soft target?



Evolution of a secure product – Preventing the clipping of coins



Hammered



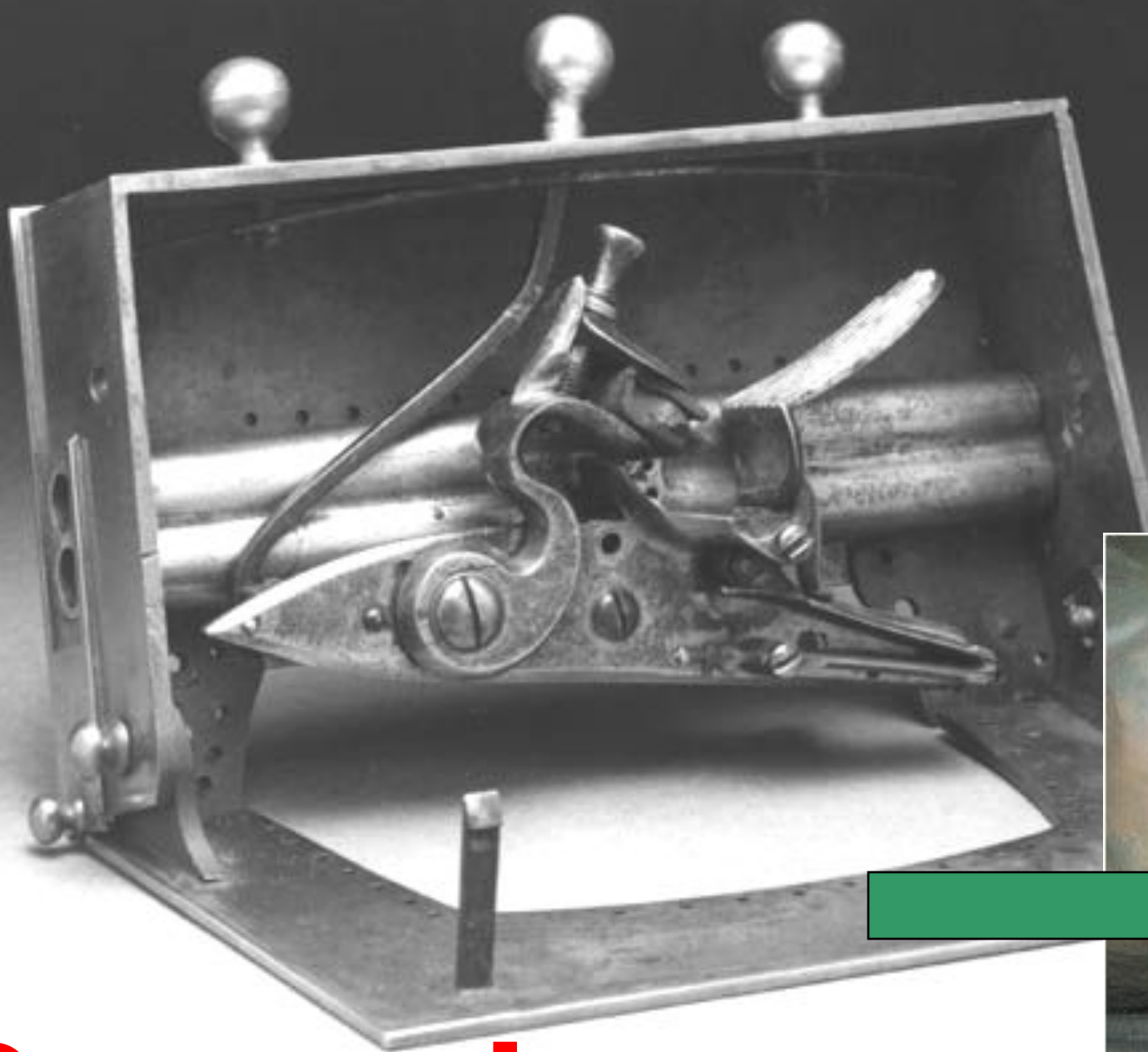
Milled

Security product – Clothes tagging device



Security Product/ Security Communication





Danger!

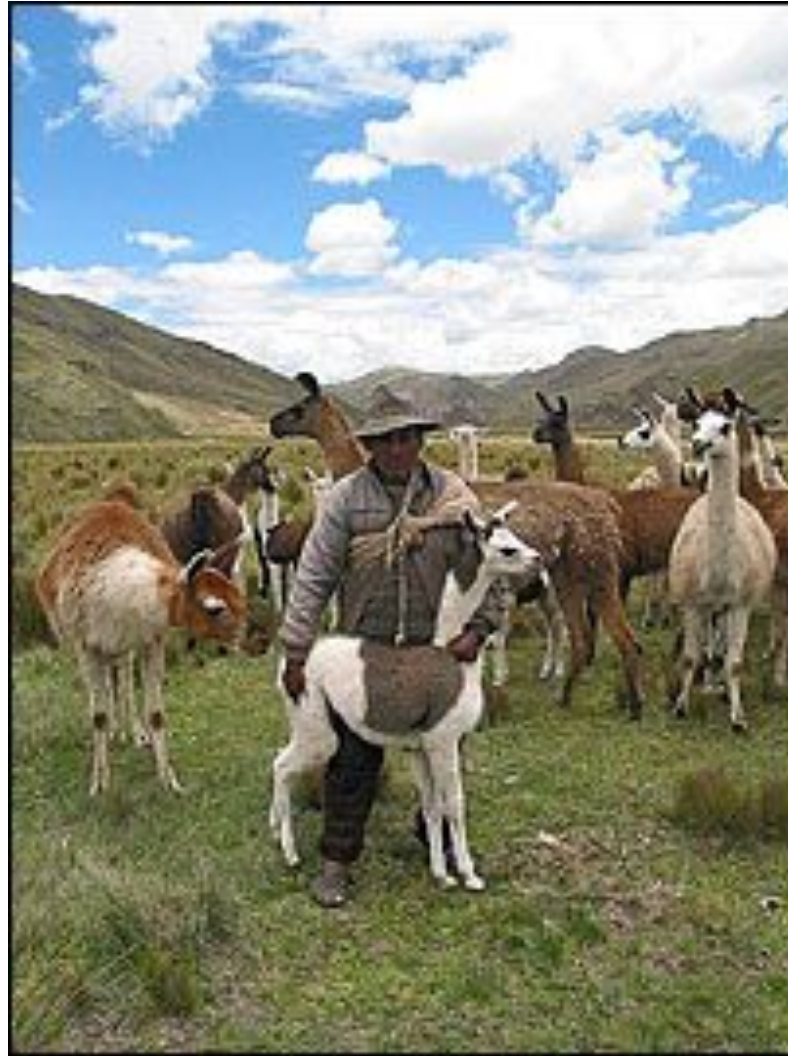


Security component – Brand Protection

Security Features/ Furniture/ Accessories



Security System – Chips Protect High-Value Alpacas



Security Communication

From Streets of London...

...to Victoria Station...




- Lock the frame and both wheels to the stand or strong immovable object
- Make the lock and bike hard to manoeuvre when parked
- Do not allow thieves to place your lock(s) in contact with the ground

on street bicycle parking

www.bikeoff.org

Keep a record of your frame number*.
Without a frame number the police don't stand a chance of recovering your bike if it's stolen.
You can register your number with a scheme like:
www.immobilise.com

Other methods of security tagging include:
www.datatag.com www.alpha-dot.co.uk
www.smartwater.com www.selectamark.co.uk

* Do this at the point of purchasing your bike, you'll never get around to it otherwise.



This is where to find your bike frame number.

Buy a decent lock (and preferably two)
Before visiting a cycle shop check www.soldsecure.com for certified locks. Expect to pay £40 upwards for a certified locking system.

Locking mechanisms that certified locks use include:



d-lock



extension cable



heavy chain lock

- **Locks are not for life.** Keep your security up to date.
- **Get insurance.** Check if your house insurance already covers your bicycle when away from home, and also whether the total value of the bike is covered. If your bike is particularly valuable you may need to insure it separately. See www.bikeforum.net for recommended insurers.

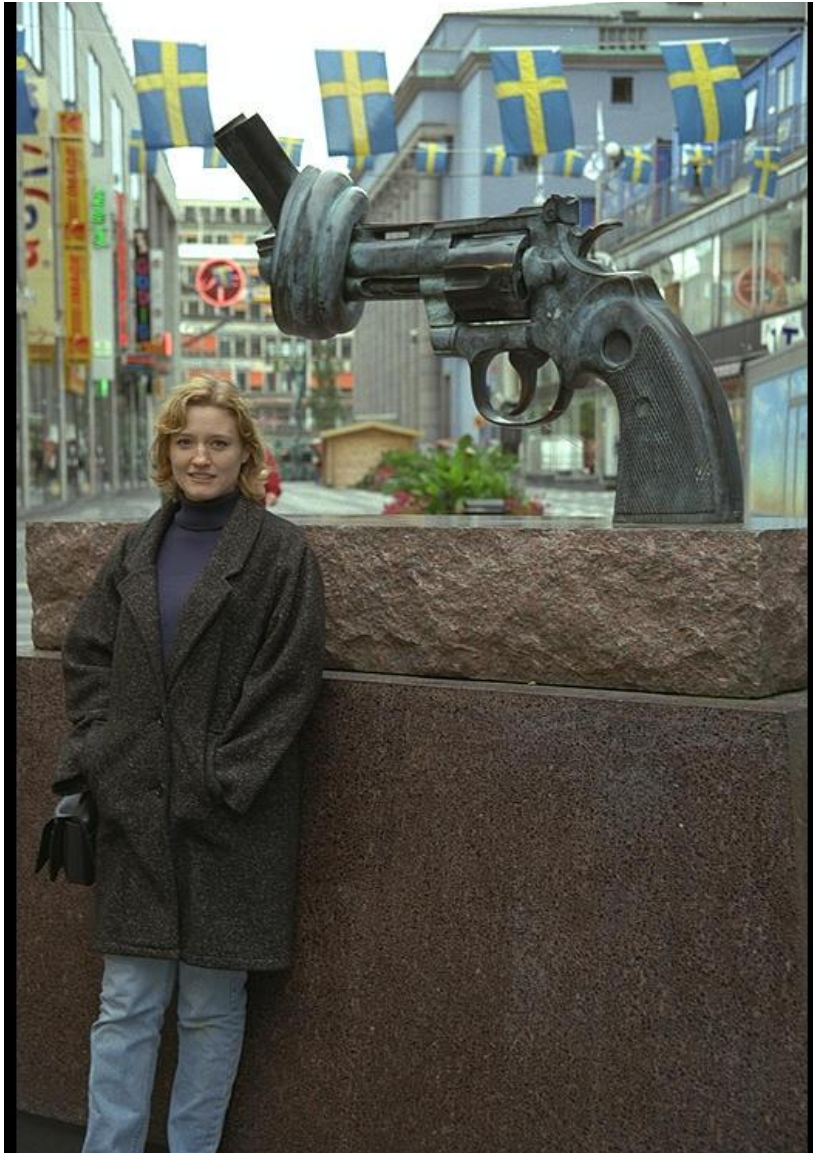




...to MOMA New York



Security Communication/Art



Security Clothing – Wearable Solutions



Secure Place: Maiden Castle



Secure Communities



Designing for social cohesion & conflict reduction

Hi-tech solution



Lo-tech solution

Note that here, security
derives from combined
features of product and
place



Does DAC work?

- Auto theft
- Cellphone cloning
- Subway ticket machine slugs
- But more hard evidence needed

The challenge of DAC



The challenge of DAC: Troublesome Tradeoffs

Can we design secure products *without* jeopardising their main purpose and *without* their being

- Inconvenient?
- User-unfriendly?
- Ugly? Effective but hideous & clunky engineering solutions
- A threat to privacy?
- Environmentally unfriendly?
- Unsafe?
- Too expensive?



Yes! Tradeoffs can be resolved...

- **Where Design Expertise is fully engaged, early in the Design Process**
- **And all these considerations are incorporated in the Requirements Capture with sufficient priority**

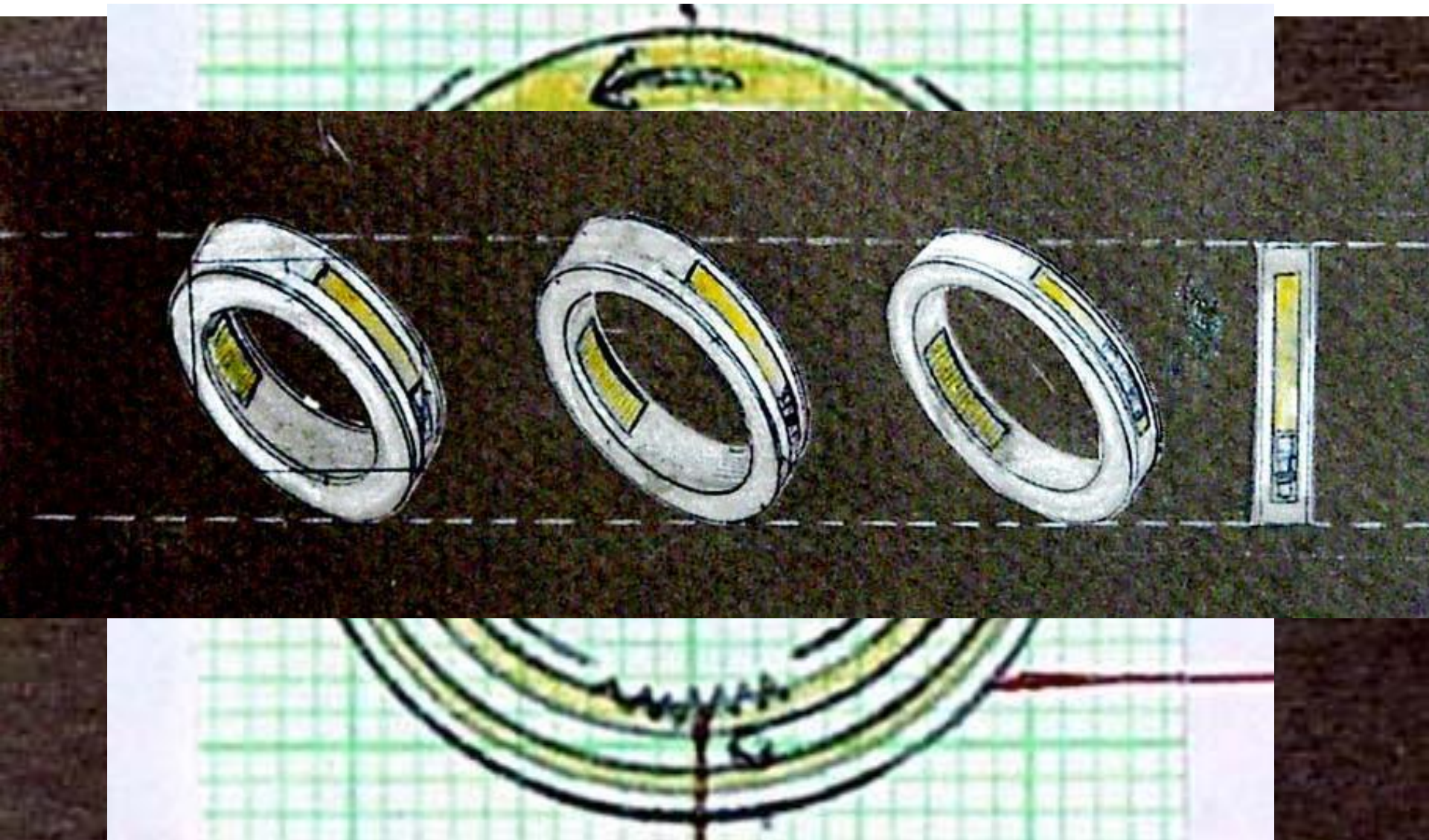
Secure products need not be ugly



DAC doesn't have to be expensive



Subtle and dynamic – the ultimate tradeoff?



The challenge of DAC – **Caught unaware**

- Product designed naïve to crime
- Crime harvest
- Retrofit solutions
 - Constrained
 - Rushed
 - Legacy of crime and/or inconvenience





What made Queen Victoria go red?

The challenge of DAC – Offenders fight back

- Tactical countermoves
 - in situ
 - return better tooled
- Counter-exploitation
- Strategic counter-design
- Reverse engineering



Repair car dents quickly and easily!

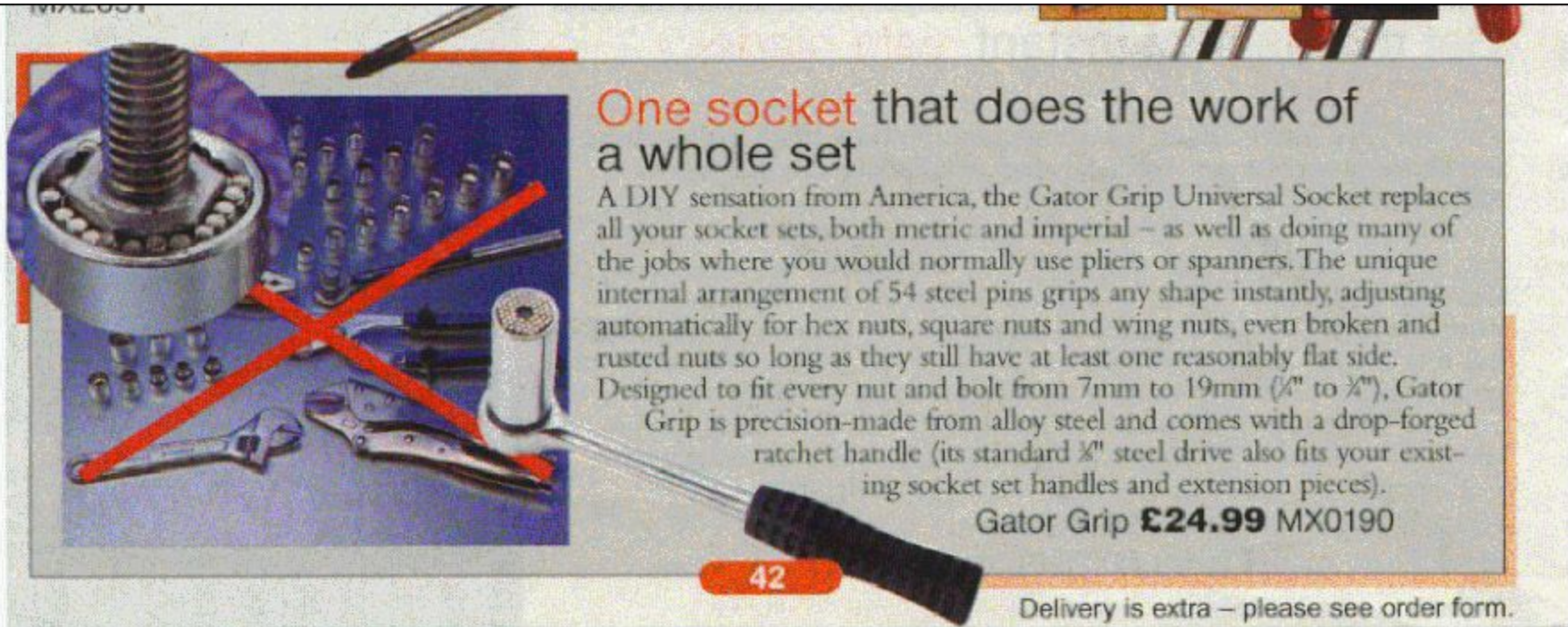
For minor dents on your bodywork the Dent Puller is the answer with vastly improved suction compared to others on the market. Simply place the cup over the dent, click the handles shut for automatic suction and gently pull out the dent. Open the handles to release the vacuum and remove without damaging the paintwork. No need to pay expensive panel beaters' bills! Can also be used to carry safely sheets of glass, metal, mirrors, etc.

Car Dent Puller Deluxe £12.99 MX0220



The challenge of DAC – Obsolescence

- Adaptive offenders' countermoves
- Changing social conditions
- New tools/ skills for crime



One socket that does the work of a whole set

A DIY sensation from America, the Gator Grip Universal Socket replaces all your socket sets, both metric and imperial – as well as doing many of the jobs where you would normally use pliers or spanners. The unique internal arrangement of 54 steel pins grips any shape instantly, adjusting automatically for hex nuts, square nuts and wing nuts, even broken and rusted nuts so long as they still have at least one reasonably flat side. Designed to fit every nut and bolt from 7mm to 19mm ($\frac{1}{4}$ " to $\frac{3}{4}$ "), Gator Grip is precision-made from alloy steel and comes with a drop-forged ratchet handle (its standard $\frac{1}{2}$ " steel drive also fits your existing socket set handles and extension pieces).

Gator Grip £24.99 MX0190

42

Delivery is extra – please see order form.

Arms Race – Safes and Safecrackers

IR REPAIRS



Spread of criminal know-how – from pubs & prisons to the Internet



... **lock picking** and **lock pick** equipment
236 x 195 pixels - 6k - jpg
www.force-ten.com

[[More results from www.force-ten.com](#)]



Lock Picking 101 Guide to **Lock** ...
541 x 445 pixels - 54k - jpg
www.geocities.com



Lock Picking 101 Kit - Locksmith ...
223 x 298 pixels - 19k - jpg
www.lockpickshop.com



... get the pins out of the old **lock**
400 x 238 pixels - 28k - jpg
www.howstuffworks.com



Lock-Picking-Basics
225 x 334 pixels - 17k - jpg
www.lockpickshop.com
[[More results from www.lockpickshop.com](#)]



Lock Picking 101 Guide to **Lock** ...
1632 x 1224 pixels - 263k - jpg
img208.imageshack.us



... **lock** pick into the tubular **lock** ...
350 x 262 pixels - 34k - jpg
www.devonlocks.com



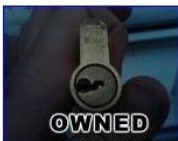
Ideal Creations **Lock Picking** ...
300 x 222 pixels - 9k - jpg
www.idealcreations.net



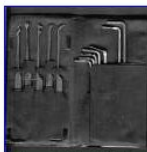
... **LOCK-PICKS-SHOP** **lock** picks, ...
193 x 166 pixels - 17k - jpg
www.lock-picks-shop.com



Lock Picking: After 2 days of talks ...
640 x 480 pixels - 65k - jpg
photos.hackinthebox.org



Lock Picking 101 Guide to **Lock** ...
1632 x 1224 pixels - 695k - jpg
img157.imageshack.us



Lock Picking 101 Guide to **Lock** ...
410 x 401 pixels - 35k - jpg
www.geocities.com
[[More results from www.geocities.com](#)]



Lock Picking 101 - **Lock Pick** Shirt
400 x 334 pixels - 17k - gif
www.hackerstickers.com
[[More results from www.hackerstickers.com](#)]



Improvised Lock Picking
150 x 194 pixels - 10k - jpg
www.lock-picking.org
[[More results from www.lock-picking.org](#)]



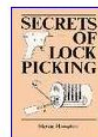
Abus spool pin
285 x 542 pixels - 103k - jpg
www.crypto.com



Guide to using our Tubular **Lock Pick**
350 x 262 pixels - 34k - jpg
www.devonlocks.com
[[More results from www.devonlocks.com](#)]



... keys and against **lock-picking**.
244 x 167 pixels - 35k - jpg
www.cherz.com



Secrets of Lock Picking
181 x 254 pixels - 11k - jpg
images.bestwebbuys.com



ADVANCED LOCK PICKING SECRETS
295 x 475 pixels - 27k - jpg
www.privateinvestigators.cc



Lock Picking 101 Guide to **Lock** ...
1632 x 1224 pixels - 152k - jpg
img436.imageshack.us

Meeting the challenge

- We have to innovate faster than offenders
- This needs
 - Motivation
 - Capacity development
 - Collaboration between Preventers and Designers

Implementing DAC –

Getting designers to

Think Thief

and

crime preventers to

Draw on Design

Helping designers think thief – Developing & building capacity for DAC

- Mindset
- Clear definitions – tools for thought
- Knowledge for interventions
- Knowledge management – capturing & replicating good practice and supporting innovation without stifling creativity
- Anticipation

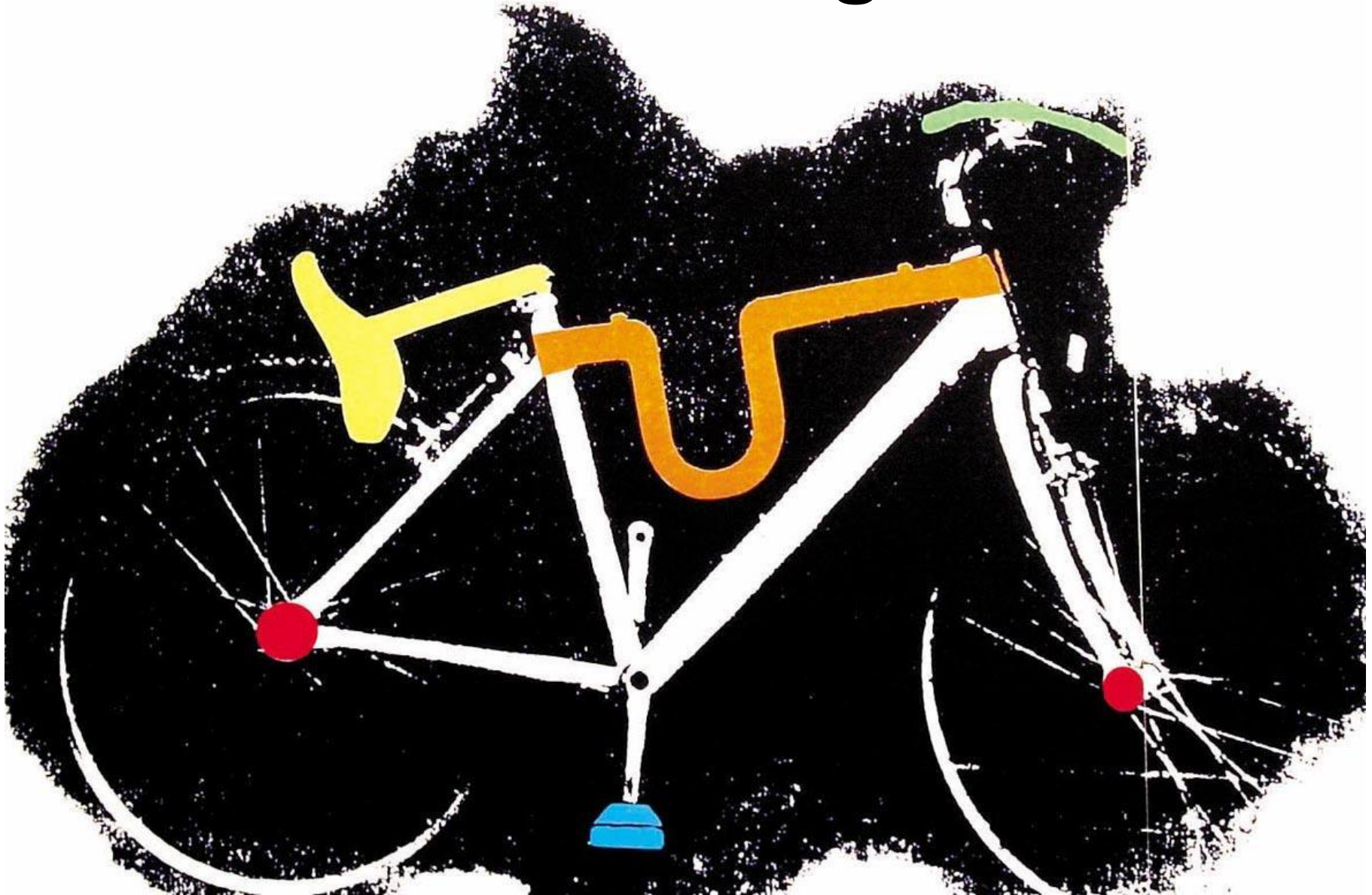
**A receptacle
for grime?**



**Wrong
mindset
for design:
failure to
think thief**

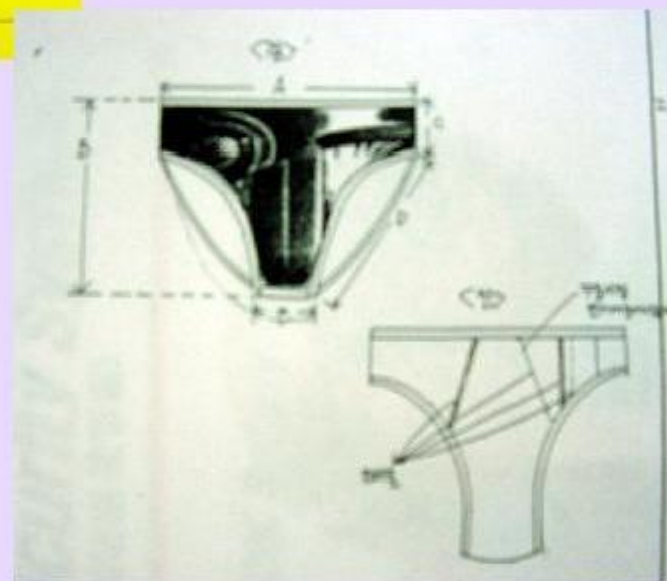
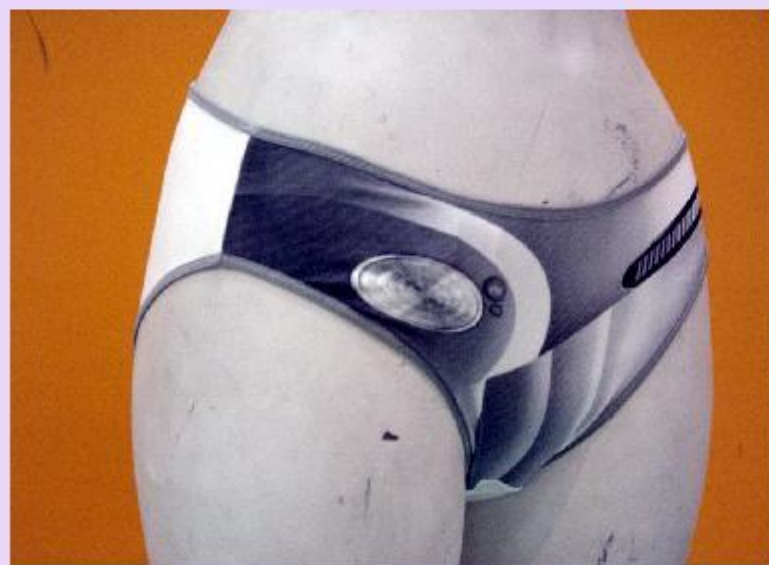
**Or a tool
for crime?**

Results of thinking thief – RSA Student Design Awards



Realisation – Vexed Generation/ Puma





Magnificent Obsession?

Definitions –

What is **Crime Prevention**?

- Intervention in the causes of criminal events to reduce the risk of their occurrence and the seriousness of their potential consequences

And **Community Safety**?

- Wider perspective centring on harm reduction and quality of life – see *crimeframeworks* on our website

Giving designers knowledge from crime prevention – Maps and frameworks

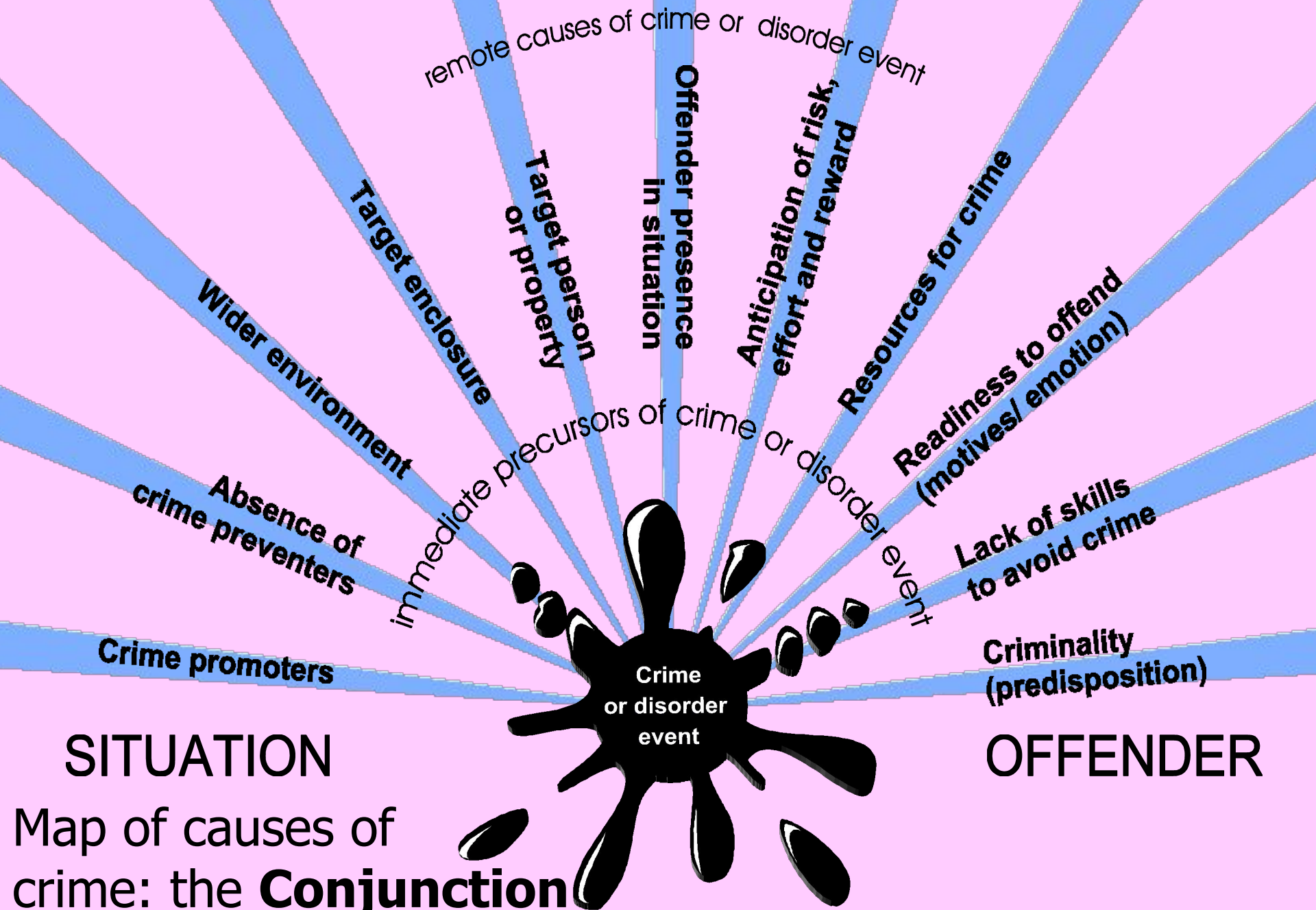
- Importance of *Rationale* for design –

Problem, consequences and context

- Causes

- Intervention principles

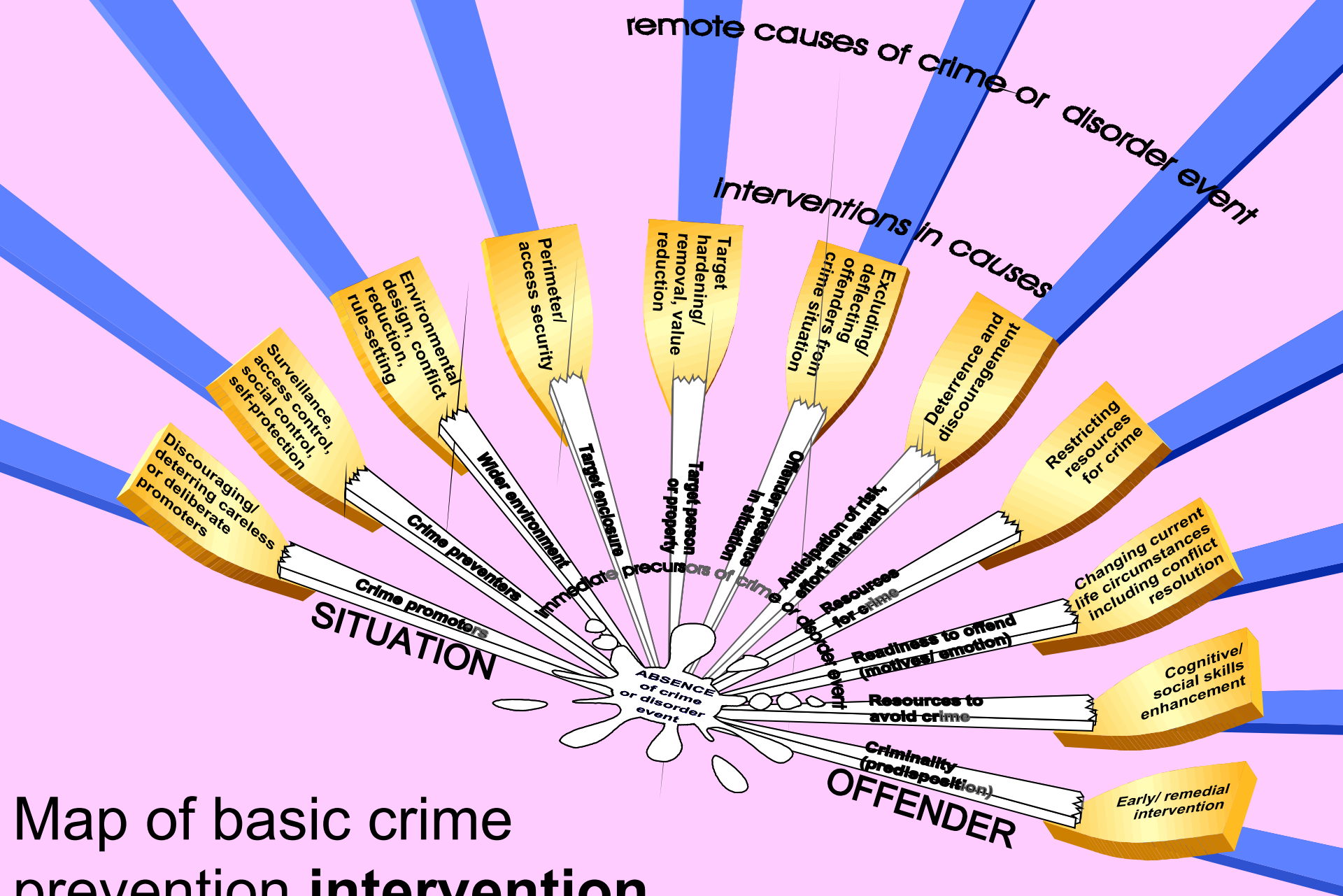
- Intervention practice



SITUATION

OFFENDER

Map of causes of crime: the **Conjunction of Criminal Opportunity**



Map of basic crime prevention **intervention principles**

**But... designers must be both
disciplined and creative**



Anticipation –

Building on knowledge of causes

- Crime Risk Assessment – incoming threats from elsewhere
- Crime Impact Assessment – exported threats from own activity
- Horizon Scanning – needs wider
 - Internet, Ubiquitous Computing, Wi-Fi will lead to increasing blurring of boundaries between products, places, systems
 - Implications for crime/ crime prevention call home if stolen



Anticipating criminogenic design

Products (including fashion products) can be subject to crime in several distinct ways:

- **Misappropriation**, or theft
- **Mistreatment**, or harm/injury/damage
- **Mishandling** – stolen property, fraud, counterfeit
- **Misuse** – resources or setting for crime
- **Misbehaviour** – disorder

Risk factors for Misappropriation

Hot Products

- **C**oncealable
- **R**emovable
- **A**vailable
- **V**aluable
- **E**njoyable
- **D**isposable

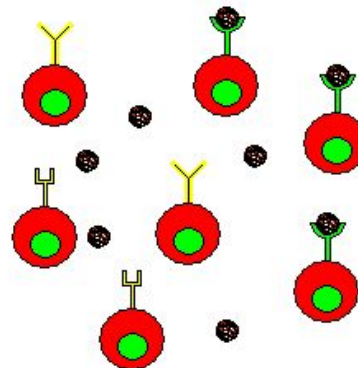
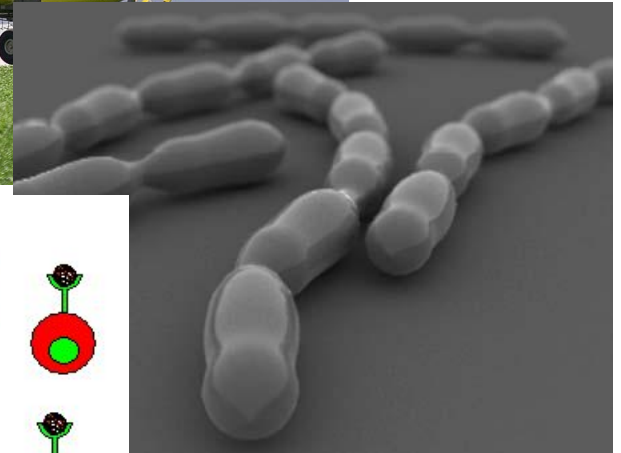


Gearing up against crime – Strategy for arms races

- Encourage variety
- Design to performance standards/ generic principles
- Study offender resources – current and future
- Exploit new technology for prevention – eg wearable tech?
- Avoid rigidity - remember Tyrannosaurus
- Future proofing
- Pipelines
- Learn from other **evolutionary struggles**

Learning from other struggles

- Military
- Predator-prey
- Pest-farmer
- Bacteria-antibiotic
- Immune system-virus



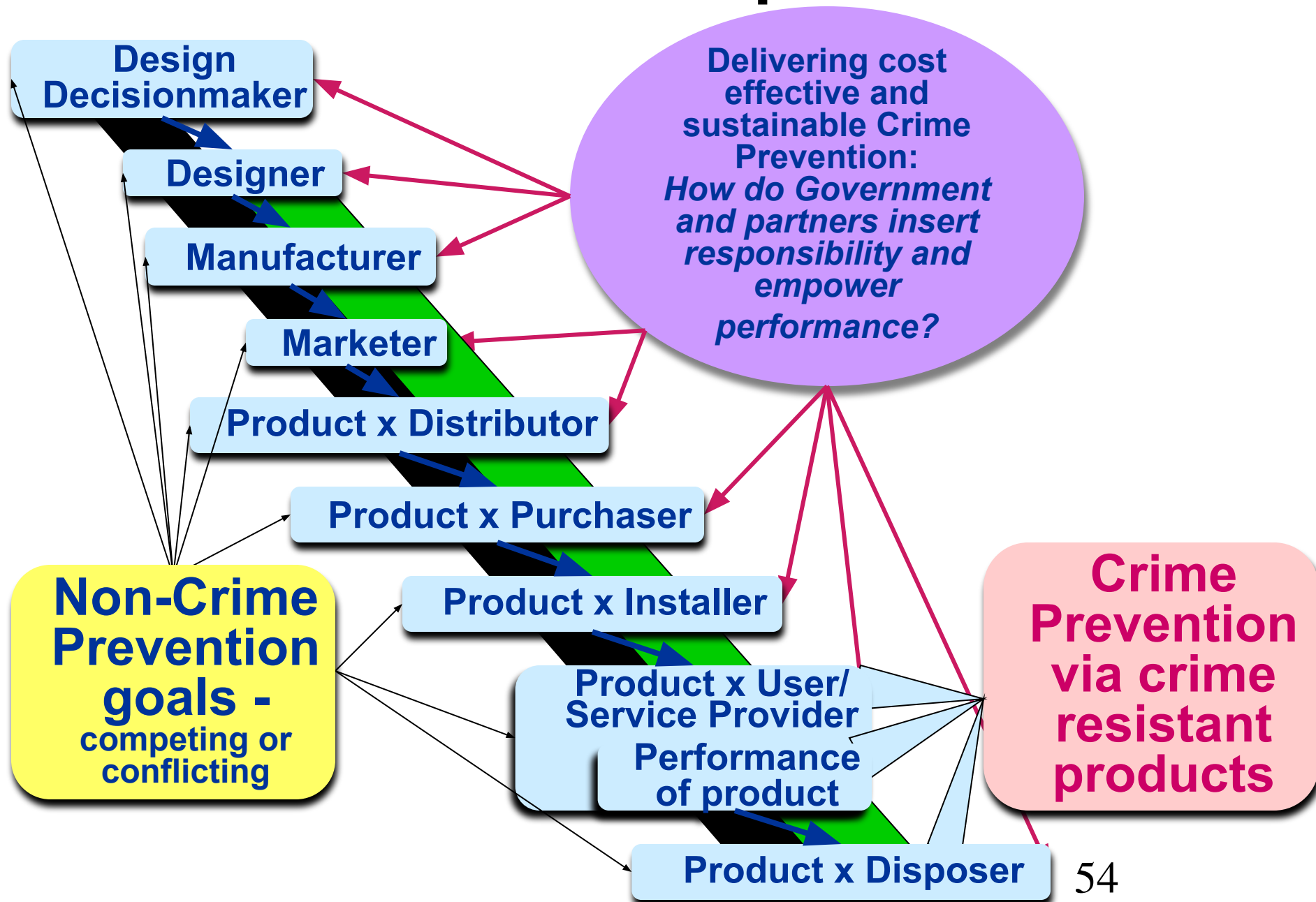
Criminogenic products – Who is responsible?

- Loss/ replacement benefits industry...and owner too
- Designed-in obsolescence
- Fashion – *must* get new model, new style
- Crime is a hidden cost or tax – but should polluter always pay?

Government and international interventions

- Auto theft
 - UK Car Theft Index – awakens market forces
 - Crime Free Car research
 - EU Directives on immobilisers
- Cellphones – cloning, IMEI codes...
- Portable personal electronic goods
 - Project MARC – crime proofing
 - CEN developing security standards

DAC – a succession of performances



DAC – Delivery

So - how do we involve designers and design decisionmakers & facilitate their performance?

- **C**larify crime prevention tasks/roles
- **L**ocate institutions/ individuals to do them
- **A**lert
- **M**otivate
- **E**mpower
- **D**irect

What can designers teach POP?

- The design way of thinking
 - Sharp focus on purpose
 - Applying generic principles to diverse contexts - thinking like consultants, not technicians
 - Creativity that is disciplined
 - Reconciling conflicting/competing constraints - Troublesome Tradeoffs
 - Respecting the user perspective
 - Iteration – repeatedly testing & adjusting till it's right

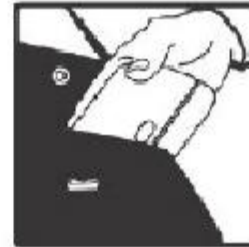
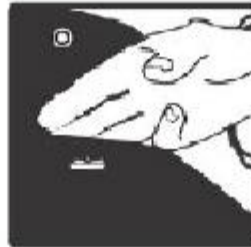
Designing Products Against Crime – What can *local* police do?

- Collect information on
 - Product vulnerabilities, misuse (...all the Ms)
 - Modus Operandi that exploit these
 - Tools that offenders use to overcome resistance
 - Successful and unsuccessful security designs
- And pass it on for inter-/national action to
 - COPS? POPCenter?
 - Individual manufacturers and designers
 - Loss-prevention/ insurance companies
- Advise buyers on secure makes/models

Learning about MOs

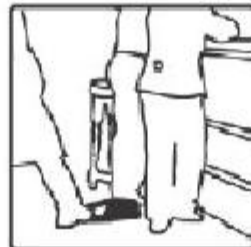
Perpetrator Techniques: Dip Lift

modus operandi



Removal of articles from a bag without the owner's awareness

Dip



Removal of the bag and contents without the owner's awareness

Lift

Designing Products Against Crime – What can local police do?

- Help attack-testing of products (supply local ‘ex’ offenders?)
- Help trial/evaluate crime resistant products
- Foster supportive climate for DAC
 - Help create public expectation/demand for secure products
 - Praise good design, ?name and shame poor design
 - Work with corporate social responsibility movement
 - Work with design schools – teaching and testing
 - Don’t go over the top – remember the Korean underwear!

Contact us at

Design Against Crime Research Centre

p.ekblom@csm.arts.ac.uk

www.designagainstcrime.com

www.designagainstcrime.com/web/crimeframeworks

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