Using behavioural insights to raise awareness on domestic burglary prevention

Robin Cuypers & Pieter Raymaekers

Goal

- to provide policymakers with an overview of behavioural insights and evidence-informed interventions that aim to increase citizens' awareness of domestic burglary prevention and encourage them to take prevention measures

- to construct an evaluation framework and provide recommendations for four specific policy measures: neighbourhood watch groups; security surveys; police advice and police labels

Methodology

Review of academic literature
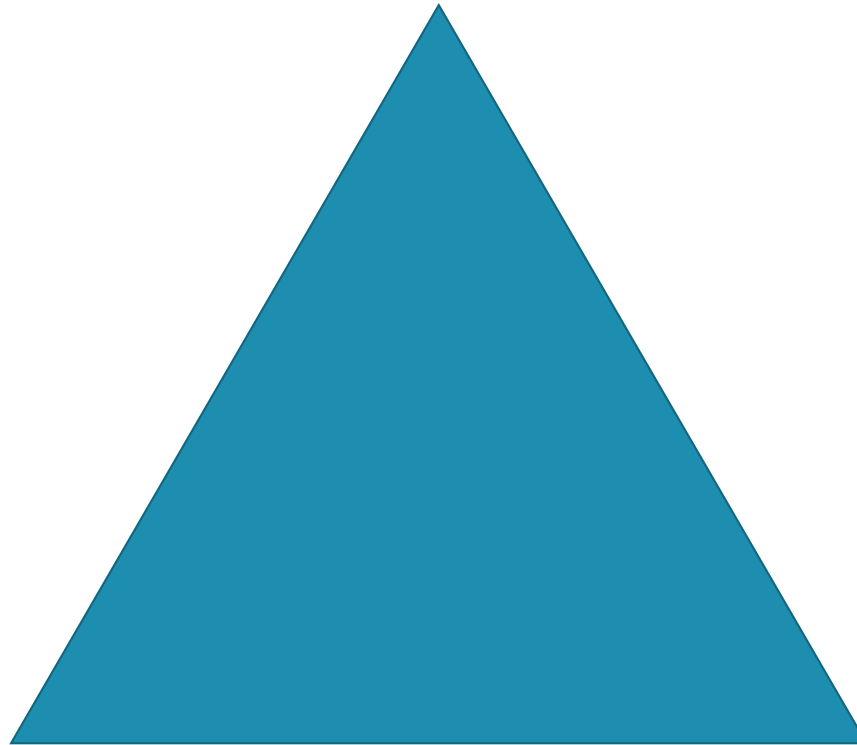
Interviews with experts

Analysis of policy evaluations and experiments

Bridging the gaps

- Intention-behaviour gap

what we know ≠ what we want ≠ what we do

- Behavioural sciences - Policy sciences

→ Behavioural Public Policy

→ Behaviourally informed policy instruments

Behavioural Public Policy

- Multidisciplinary and multipurpose approach to public policy that combines theories, frameworks and methods from the behavioural sciences: psychology, behavioural economics, sociology, neurosciences, …

- Public policy → citizen behaviour

- Bounded rationality: influence of emotions, habits, social norms, cognitive biases, contextual features and physical environment

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Behavioural Public Policy

- Includes, but is not limited to nudging

- Can be combined with traditional policy tools

- Behavioural lens to the policy making process

Behavioural insights improve traditional tools for policy making...

THE BEHAVIOURAL INSIGHTS TEAM.

Regulation

Incentives

Information

Behavioural Insights

Figure 3.1. Behavioural insights and the policy cycle

Enforcement

Agenda setting

Ex post evaluation

Ex ante appraisal

BI rarely applied

Policy cycle

Final impact assessment

Monitoring

Monitoring

Drafting of the rule

Transposition and implementation

BI mostly applied

Implementation

THE COGNITIVE BIAS CODEX

What Should We Remember?

Too Much Information

Not Enough Meaning

We store memories differently based on how they were experienced

We reduce events and lists to their key elements

We discard specifics to form generalities

We edit and reinforce some memories after the fact

To avoid mistakes, we aim to preserve autonomy and group status, and avoid irreversible decisions

To get things done, we tend to complete things we've invested time and energy in

We notice things already primed in memory or repeated often

Bizarre, funny, visually striking, or anthropomorphic things stick out more than non-bizarre/unfunny things

We notice when something has changed

We are drawn to details that confirm our own existing beliefs

We notice flaws in others more easily than we notice flaws in ourselves

We tend to find stories and patterns even when looking at sparse data

We fill in characteristics from stereotypes, generalities, and prior histories

We imagine things and people we're familiar with or fond of as better

We simplify probabilities and numbers to make them easier to think about

We think we know what other people are thinking

We project our current mindset and assumptions onto the past and future

Annotations (highlighted in green boxes)

- Status quo bias
- Hyperbolic discounting / Present bias
- Optimism bias / Overconfidence effect

Bias labels

Tip of the tongue phenomenon, Levels-of-processing effect, Absent-mindedness, Next-in-line effect, Testing effect, Google effect, Suffix effect, Serial-position effect, Part-set cueing effect, Serial recall effect, List-length effect, Modality effect, Memory inhibition, Primacy effect, Recency effect, Duration neglect, Persistence, Misinformation effect, Leveling and sharpening, Peak-end rule, Fading affect bias, Negativity bias, Prejudice, Stereotypical bias, Implicit stereotypes, Implicit association, Spacing effect, Suggestibility, False memory, Cryptomnesia, Source confusion, Misattribution of memory, Less-is-better effect, Occam's razor, Conjunction fallacy, Law of Triviality, Bike-shedding effect, Rhyme-as-reason effect, Belief bias, Information bias, Ambiguity bias

Availability heuristic, Attentional bias, Illusory truth effect, Mere-exposure effect, Context effect, Cue-dependent forgetting, Mood-congruent memory bias, Frequency illusion, Baader-Meinhof Phenomenon, Empathy gap, Omission bias, Base rate fallacy, Bizarreness effect, Humor effect, Von Restorff effect, Picture superiority effect, Self-relevance effect, Negativity bias, Anchoring, Conservatism, Contrast effect, Distinction bias, Focusing effect, Framing effect, Money illusion, Weber-Fechner law, Confirmation bias, Congruence bias, Post-purchase rationalization, Choice-supportive bias, Selective perception, Observer-expectancy effect, Experimenter's bias, Observer effect, Expectation bias, Ostrich effect, Subjective validation, Continued influence effect, Semmelweis reflex, Bias blind spot, Naïve cynicism, Naïve realism, Confabulation, Clustering illusion, Insensitivity to sample size, Neglect of probability, Anecdotal fallacy, Illusion of validity, Masked-man fallacy, Recency illusion, Gambler's fallacy, Hot-hand fallacy, Illusory correlation, Pareidolia, Anthropomorphism, Group attribution error, Ultimate attribution error, Stereotyping, Essentialism, Functional fixedness, Moral credential effect, Just-world hypothesis, Argument from fallacy, Authority bias, Bandwagon effect, Placebo effect, Out-group homogeneity bias, Cross-race effect, In-group favoritism, Halo effect, Cheerleader effect, Positivity effect, Not invented here, Reactive devaluation, Well-traveled road effect, Mental accounting, Appeal to probability fallacy, Normalcy bias, Murphy's Law, Zero-sum bias, Survivorship bias, Subadditivity effect, Denomination effect, The magical number 7 ± 2, Illusion of transparency, Curse of knowledge, Spotlight effect, Extrinsic incentive error, Illusion of external agency, Illusion of asymmetric insight, Self-consistency bias, Restraint bias, Projection bias, Pro-innovation bias, Time-saving bias, Planning fallacy, Pessimism bias, Optimism bias, Impact bias, Declinism, Moral luck, Hindsight bias, Outcome bias, Rosy retrospection, Telescoping effect

Status quo bias, Social comparison effect, Decoy effect, Reactance, Reverse psychology, System justification, Backfire effect, Endowment effect, Processing difficulty effect, Pseudocertainty effect, Disposition effect, Zero-risk bias, Unit bias, IKEA effect, Loss aversion, Generation effect, Escalation of commitment, Irrational escalation, Sunk cost fallacy, Identifiable victim effect, Appeal to novelty, Hyperbolic discounting, Peltzman effect, Risk compensation, Effort justification, Trait ascription bias, Defensive attribution hypothesis, Fundamental attribution error, Illusory superiority, Illusion of control, Actor-observer bias, Self-serving bias, Barnum effect, Forer effect, Optimism bias, Egocentric bias, Dunning-Kruger effect, Lake Wobegone effect, Hard-easy effect, False consensus effect, Third-person effect, Social desirability bias, Overconfidence effect

(Source: Design by John Manoogian III, Concept + meticulous categorisation by Benson, 2016)
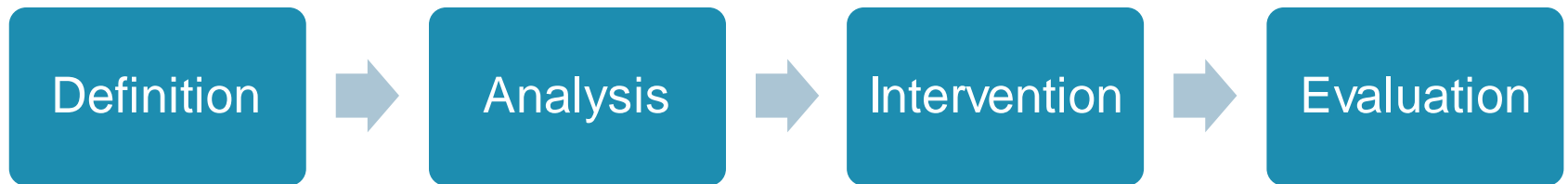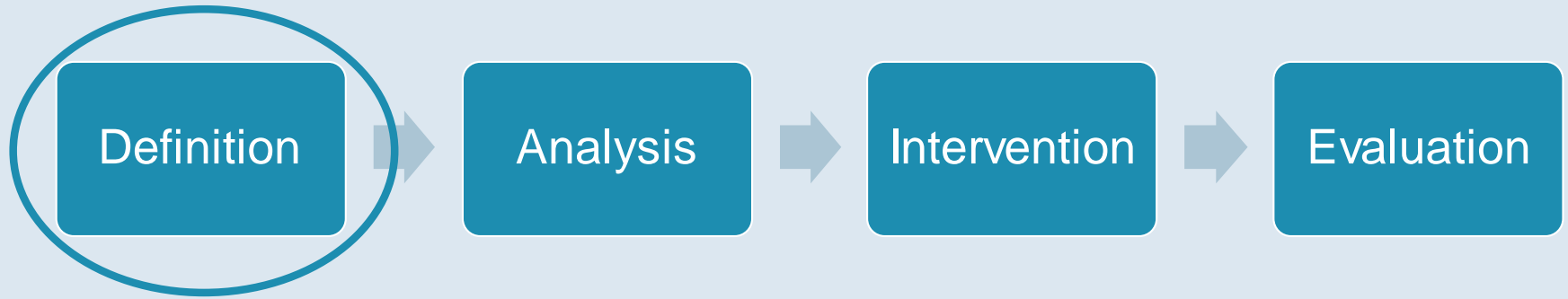
Cognitive biases

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2. **Analysis**: what are behavioural models and determinants?

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4. **Evaluation**: how to evaluate behavioural interventions?

5. **Cases**: four behavioural burglary prevention measures

6. **Conclusions**

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4 stages of a behavioural intervention

Definition → Analysis → Intervention → Evaluation

Definition → Analysis → Intervention → Evaluation

1. Definition

What is the policy problem and the desired behaviour?

Behavioural change

Purpose: what is the desired behaviour?

- What is the problem behaviour?

- Who is the target audience?

- **W**ho does **w**hat, **w**here and **w**hen? And **w**hy is this a (policy) problem? (5W's)

- What is the desired behaviour?

Definition → Analysis → Intervention → Evaluation
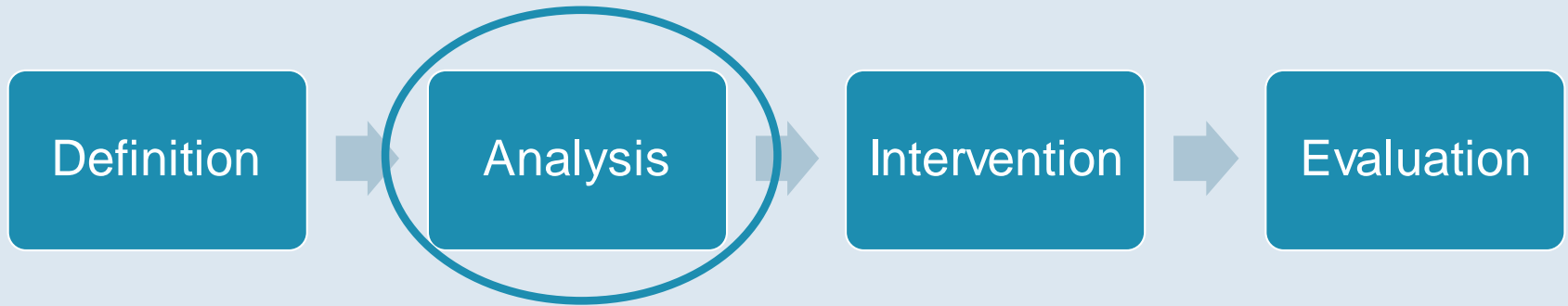
2. Analysis

What are behavioural models and determinants?

What are behavioural models?

1. Dual process theory

2. Elaboration likelihood model

3. Protection movitation theory and fear-based messaging

Dual process theory

THE *NEW YORK TIMES* BESTSELLER

THINKING,

FAST AND SLOW

DANIEL

KAHNEMAN

WINNER OF THE NOBEL PRIZE IN ECONOMICS

"[A] masterpiece . . . This is one of the greatest and most engaging collections of insights into the human mind I have read." —WILLIAM EASTERLY, *Financial Times*
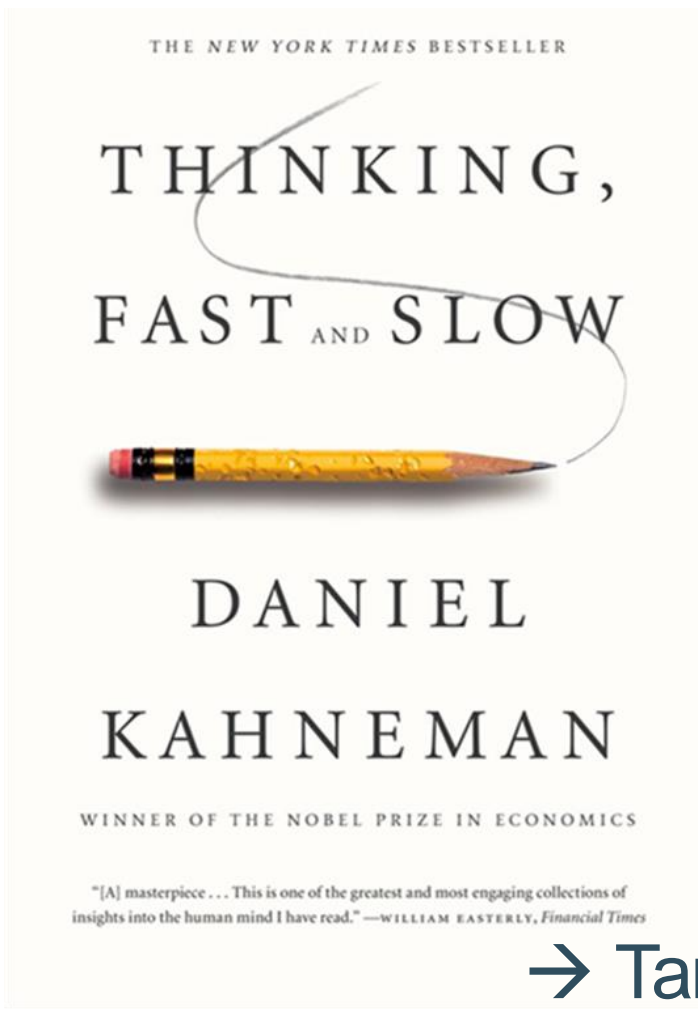
System 1	System 2
Fast	Slow
Unconscious	Conscious
Automatic	Effortful
Everyday Decisions	Complex Decisions
Error prone	Reliable

→ Target both

15

Elaboration likelihood model

- Changes attitude

- Reaction towards persuasive communication

- Central attitude change
  - Conscious thinking
  - Longer-lasting
  - Requires:
    - Motivation to process
    - Ability to process
    - (Un)favourable thoughts

- Peripheral attitude shift
  - Intuitive associations
  - Shorter-lasting

→ Target both

Elaboration likelihood model

Source: Guyer, Briñol, Petty, & Horcajo, 2019
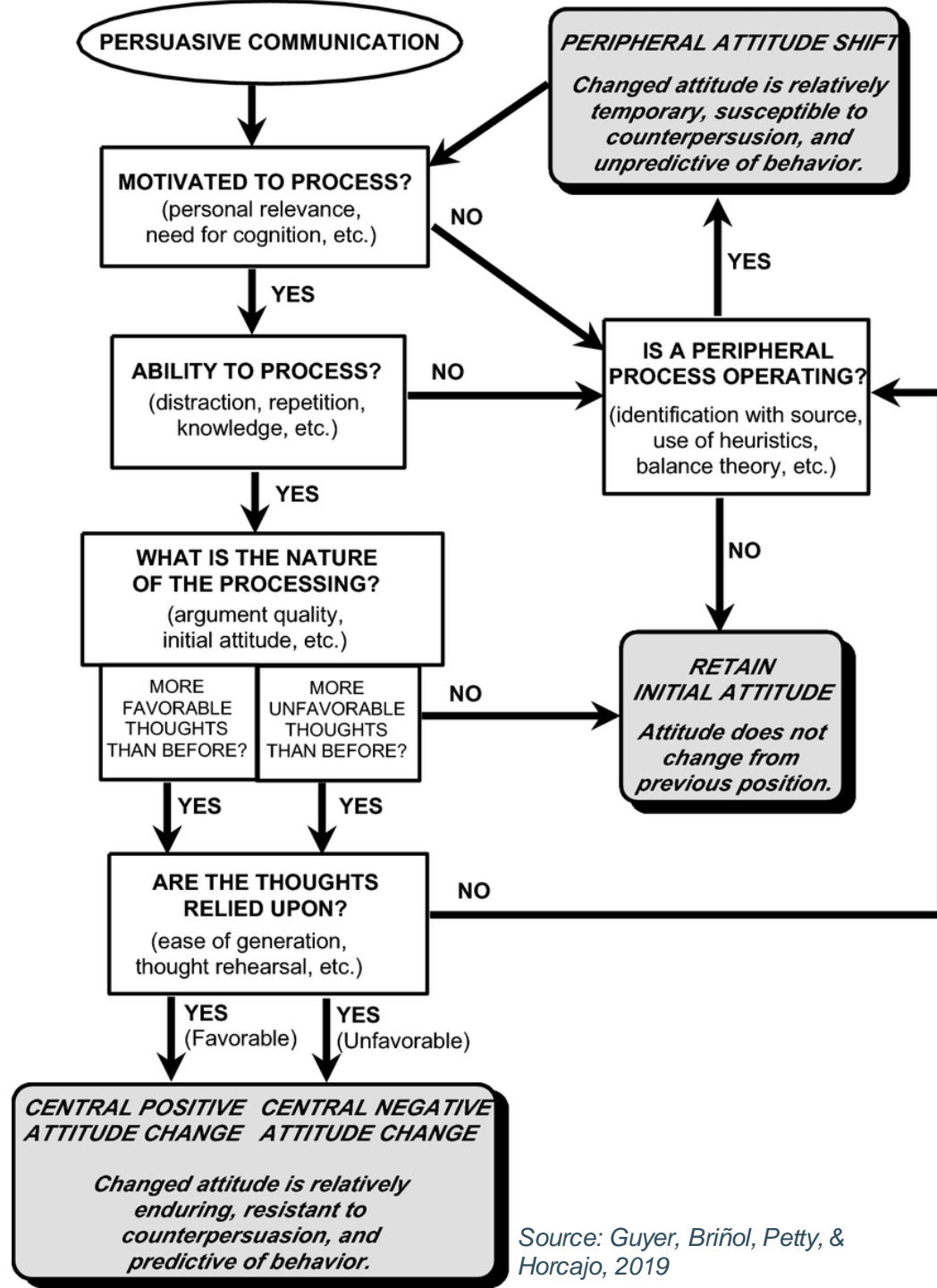
Protection motivation theory and fear-based messaging

- Fear of crime
  - Situational fear → dispositional fear
  - Emotional experience → fearful behaviour

- Possible negative consequences!
  - Anxiety
  - Lack of trust
  - Negative behaviours (e.g., limiting social activity, drug use)

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Protection motivation theory and fear-based messaging

Threat Appraisal
- Severity
- Vulnerability
- Intrinsic reward
- Extrinsic reward

Knowledge, Experience

Coping Appraisal
- Response efficacy
- Self-efficacy
- Response cost

Behavior intention
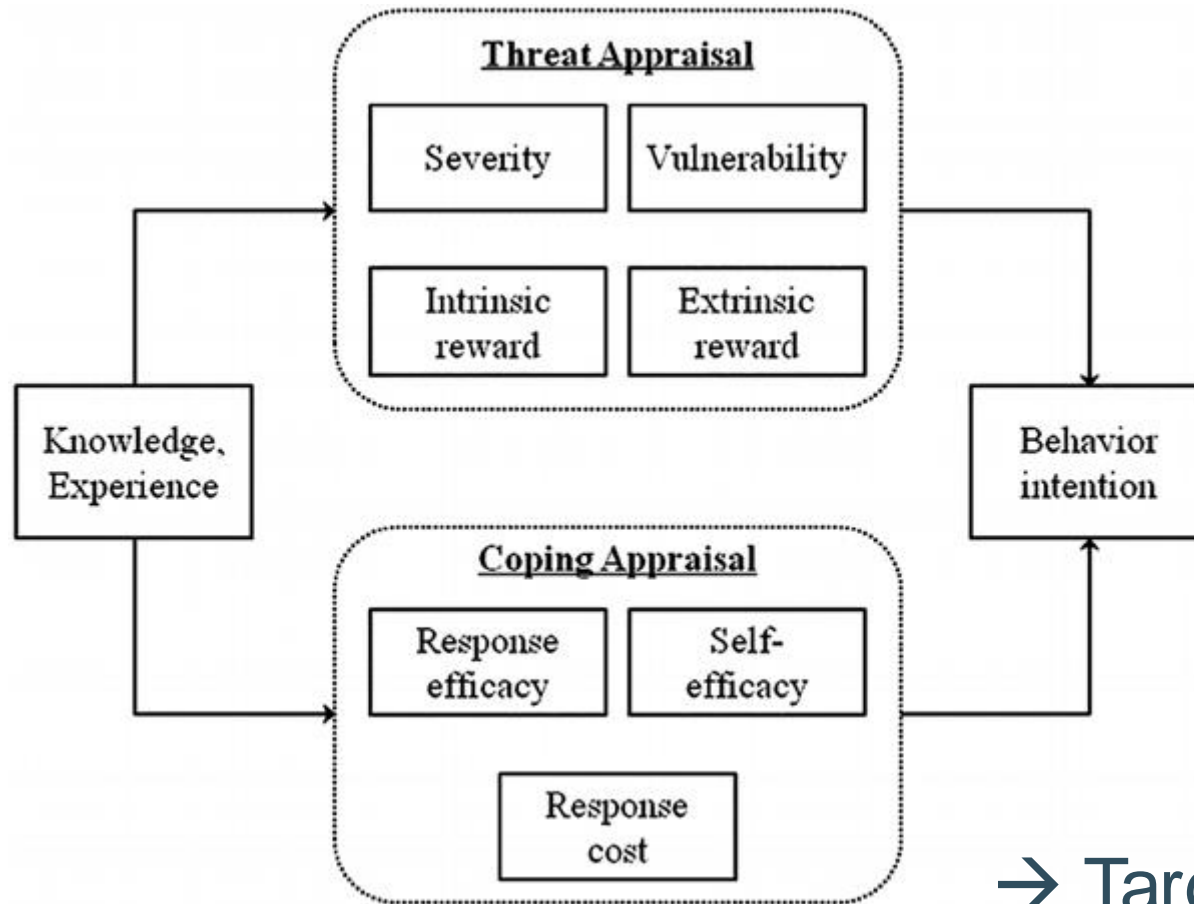
→ Target both

Source: Xiao et al., 2014

COM-B Model
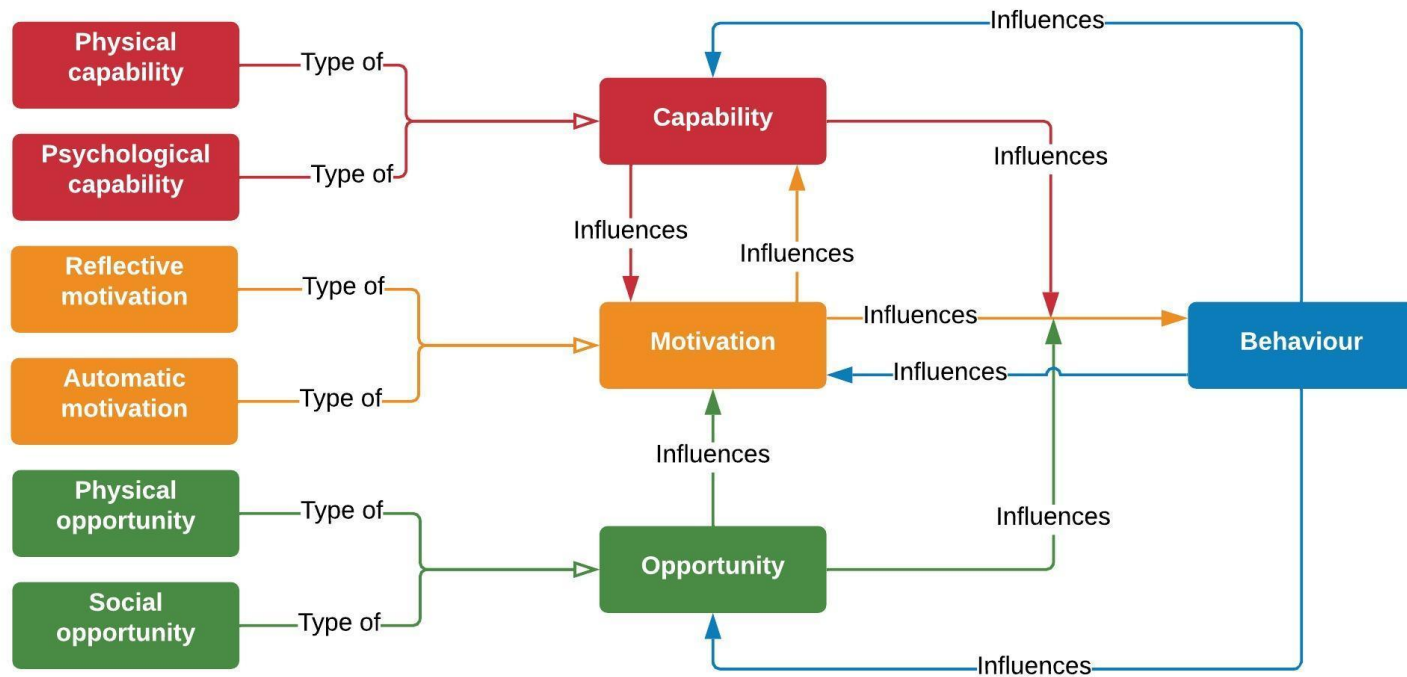
Capability is an attribute of a person that together with opportunity makes a behaviour possible or facilitates it.

Opportunity is an attribute of an environmental system that together with capability makes a behaviour possible or facilitates it.

Motivation is an aggregate of mental processes that energise and direct behaviour

Behaviour is individual human activity that involves co-ordinated contraction of striated muscles controlled by the brain.

Physical capability is capability that involves a person's physique, and musculoskeletal functioning (e.g. balance and dexterity).

Psychological capability is capability that involves a person's mental functioning (e.g. understanding and memory).

Reflective motivation is motivation that involves conscious thought processes (e.g. plans and evaluations).

Automatic motivation is motivation that involves habitual, instinctive, drive-related, and affective processes (e.g. desires and habits).

Physical opportunity is opportunity that involves inanimate parts of the environmental system and time (e.g. financial and mterial resources).

Social opportunity is opportunity that involves other people and organisations (e.g. culture and social norms).

Source: West & Michie, 2020

Definition → Analysis → Intervention → Evaluation
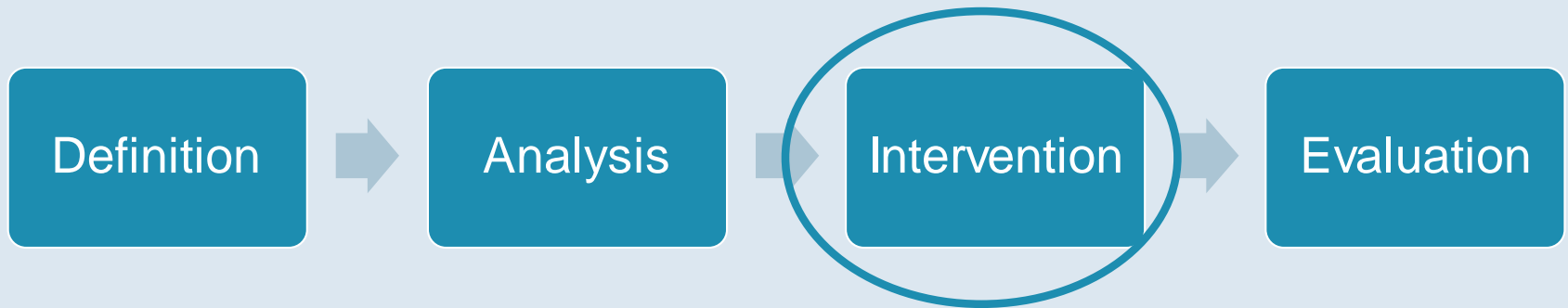
3. Interventions

How to develop and categorise behavioural interventions?

How do we categorise behavioural insights?

- Taxonomy of Choice Architecture Techniques by Münscher, Vetter & Scheuerle (2016)

- Three main categories:
  - A. Decision information
  - B. Decision structure
  - C. Decision assistance

How do we categorise behavioural insights?

Category	Technique	Examples
A. Decision information	A 1 Translate information *Includes: reframe, simplify information*	• "Security measures save money" instead of "security measures prevent the loss of money"
	A 2 Make information visible *Includes: make own behaviour visible (feedback), make external information visible*	• Indications of own burglary prevention behaviour (e.g., WIDE)
	A 3 Provide social reference point *Includes: refer to descriptive norm, refer to opinion leader*	• Burglary prevention tips by police officers

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How do we categorise behavioural insights?

Category	Technique	Examples
B. Decision structure	B 1 Change choice defaults *Includes: set no-action default, use prompted choice*	• Default alarms in new buildings
	B 2 Change option-related effort *Includes: increase/decrease physical/financial effort*	• Free security equipment installation
	B 3 Change range or composition of options *Includes: change categories, change grouping of options*	• Presenting security measures as multiple small payments instead of 1 large payment
	B 4 Change option consequences *Includes: connect decision to benefit/cost, change social consequences of the decision*	• Focusing on the consequences of prevention measures on neighbourhood safety

How do we categorise behavioural insights?

| Category	Technique	Examples
C. Decision assistance	C 1 Provide reminders	• Reminding citizens of burglary prevention tips
	C 2 Facilitate commitment *Includes: support self-commitment/public commitment*	• Plaques/labels on homes showing security investments

Definition → Analysis → Intervention → **Evaluation**
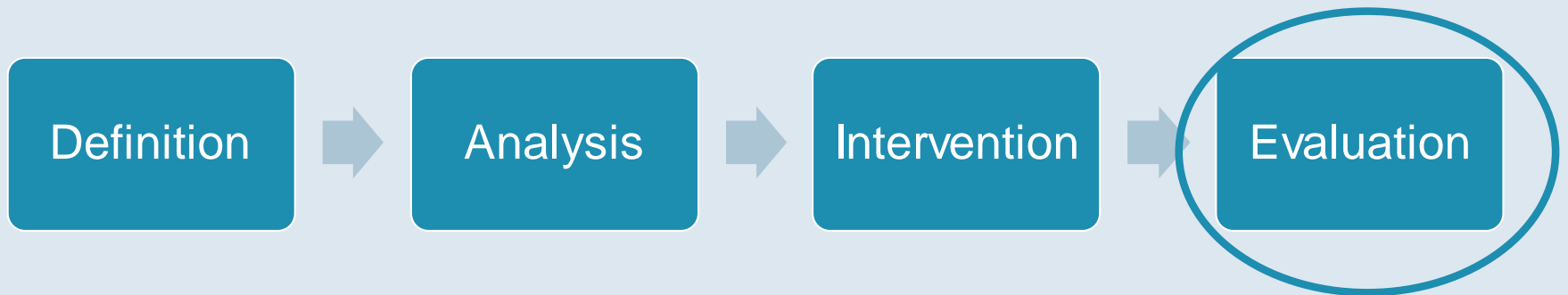
4. Evaluation

How to evaluate behavioural interventions?

How do we evaluate behavioural insights?

- The EMMIE Framework
- Score: 0* - 4*
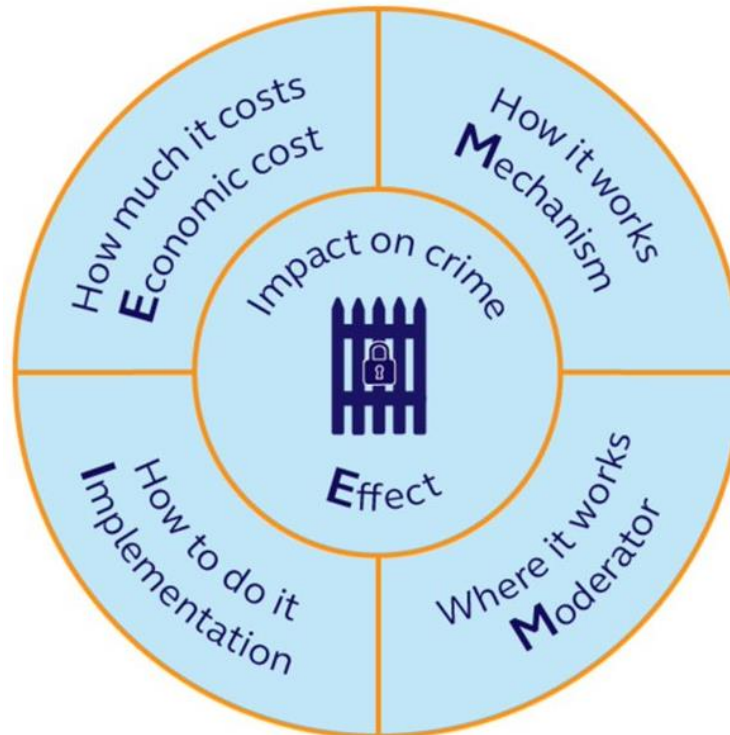
Source: College of Policing, s.d.

How do we evaluate behavioural insights?

E   The overall **effect direction and size** (alongside major unintended effects) of an intervention and the confidence that should be placed on that estimate

M   The **mechanisms/mediators** activated by the policy, practice or program in question

M   The **moderators/contexts** relevant to the production/non-production of intended and major unintended effects of different sizes

I   The key sources of success and failure in **implementing** the policy, practice or program

E   The **economic costs** (and benefits) associated with the policy, practice or program.

Source: Johnson, Tilley & Bowers, 2015

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# 5. Burglary prevention awareness measures

Neighbourhood watch

Neighbourhood watch

- Activities in which residents of a community aim to improve the safety and quality of life in neighbourhoods
- E.g., patrolling the neighbourhood, reporting suspicious activity, educating residents on crime prevention, online watch groups

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Neighbourhood watch

- Behavioural theory
  - Protection motivation theory
  - Community engagement theory

Source: Xiao et al., 2014
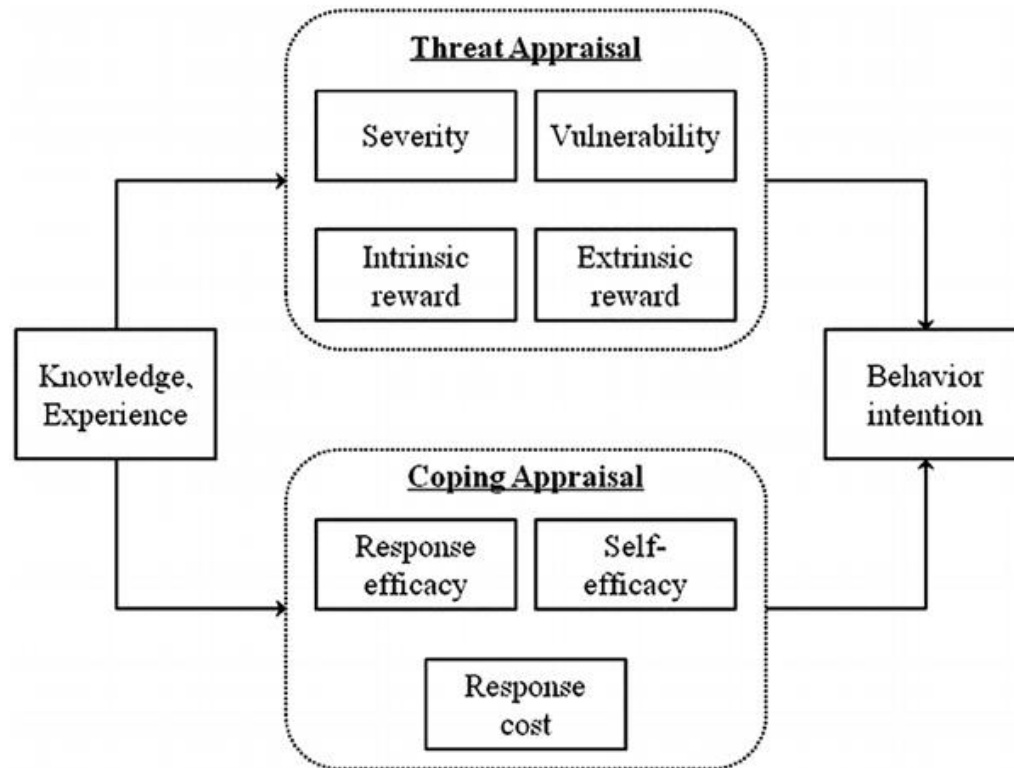
Neighbourhood watch

- Taxonomy of Choice Architecture Techniques by Münscher, Vetter & Scheuerle (2016).

Category	Technique	Examples
A. Decision information	A 1 Translate information *Includes: reframe, simplify information*	
	A 2 Make information visible ***Includes: make own behaviour visible (feedback), make external information visible***	• Directly contacting residents • Organising events
	A 3 Provide social reference point *Includes: refer to descriptive norm, refer to opinion leader*	
B. Decision structure	B 1 Change choice defaults *Includes: set no-action default, use prompted choice*	
	B 2 Change option-related effort *Includes: increase/decrease physical/financial effort*	
	B 3 Change range or composition of options *Includes: change categories, change grouping of options*	
	B 4 Change option consequences ***Includes: connect decision to benefit/cost, change social consequences of the decision***	• Increasing social cohesion and providing information of prevention measures on neighbourhood
C. Decision assistance	**C 1 Provide reminders** **C 2 Facilitate commitment** ***Includes: support self-commitment/public commitment***	• Patrolling and events • Public commitment towards watch group

Neighbourhood watch

Effect
★★★

- Plenty of evidence, although no consensus
- Average decrease of crime: 19%
- Limitations: multiple activities in neighbourhood watch, no measurements outside neighbourhood, watch groups influence reporting of crime

Mechanism
★★

- Visible deterrence
- Providing information to police and authorities
- Social control through direct intervention
- Informing residents on security and safety

Neighbourhood watch

Moderator
★

- Neighbourhood status: higher status = larger impact
  - Harder measures in lower-status neighbourhoods
  - More information gathering in lower-status neighbourhoods
- Part of a larger programme
  - No impact of property marking or security surveys
- Location (e.g., USA/CA 47% reduction vs. UK 15% reduction)

Implemen-

tation
★★

- Fear of crime
  - More direct intervention → more reported crime
  - More fear of crime → more engagement → less fear of crime → less engagement
- Cooperation: residents, police, …
- Team member behaviour: false/unnecessary information, report deformation, social stereotypes

Economic

cost
★

- Depends on activities and responsible actor

Neighbourhood watch

Recommendations:

- Investigate how neighbourhood watch groups **impact the neighbourhood**, the amount of social control and social relations;

- Use neighbourhood watch groups in **higher-status neighbourhoods**, since they are more effective, while in lower-status neighbourhoods, neighbourhood watch groups can mainly be used to gather information;

- **Involve both police and residents** in implementing neighbourhood watch groups; and

- Neighbourhood watch groups are negatively influenced by fear of crime of residents, false or unnecessary information being shared, and excessive reporting by team members. **Educate watch team members** about the consequences of fear of crime.
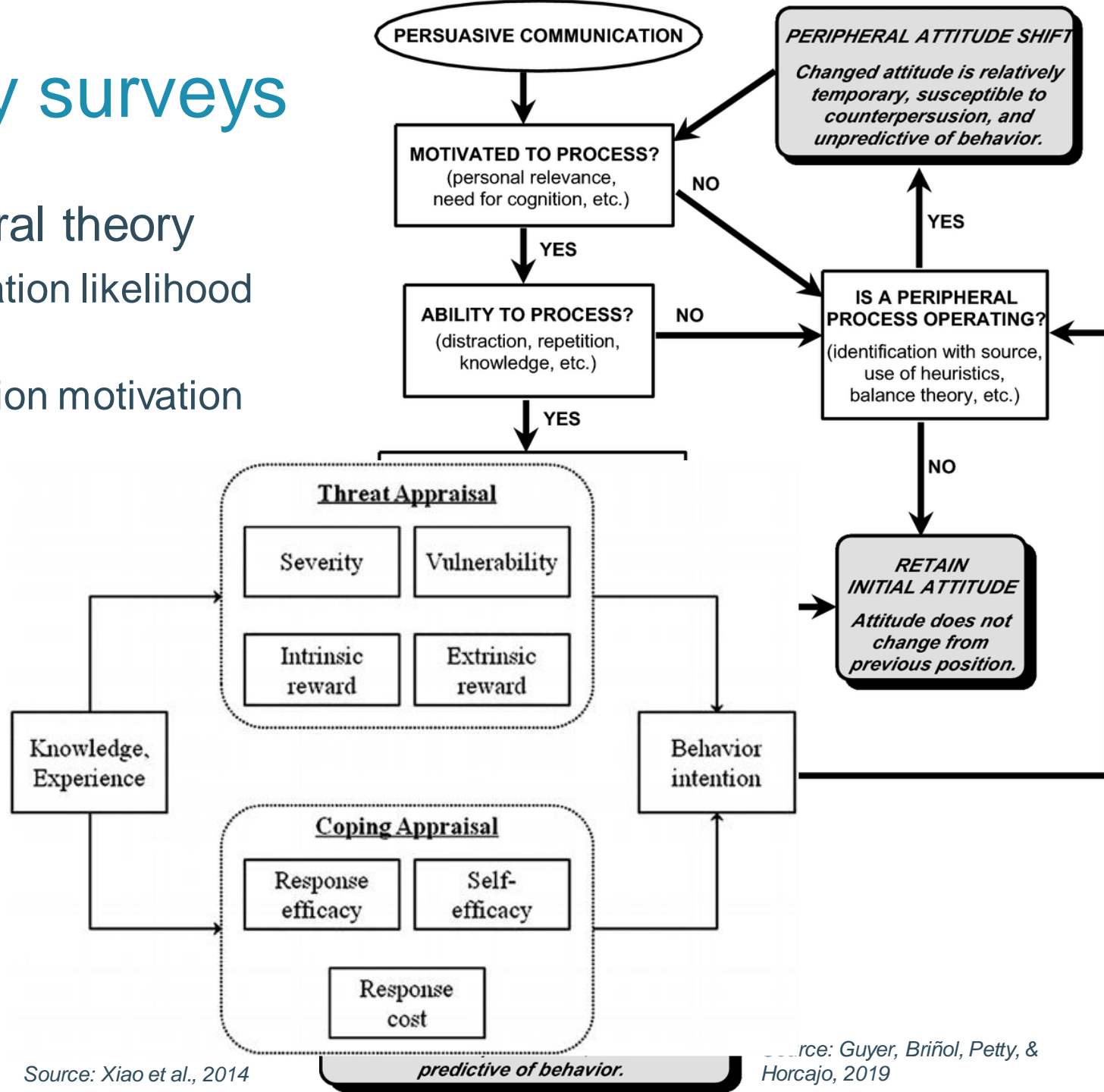
5. Burglary prevention awareness measures

Security surveys

Security surveys

- Nudging technique that uses surveys to provide information to potential burglary victims with the intent of self-reflection and burglary prevention encouragement

- Based on bicycle theft nudging techniques

Security surveys

- Behavioural theory
  - Elaboration likelihood model
  - Protection motivation theory

PERSUASIVE COMMUNICATION

MOTIVATED TO PROCESS?
(personal relevance, need for cognition, etc.)

NO

YES

ABILITY TO PROCESS?
(distraction, repetition, knowledge, etc.)

NO

YES

PERIPHERAL ATTITUDE SHIFT

Changed attitude is relatively temporary, susceptible to counterpersusion, and unpredictive of behavior.

YES

IS A PERIPHERAL PROCESS OPERATING?
(identification with source, use of heuristics, balance theory, etc.)

NO

RETAIN INITIAL ATTITUDE

Attitude does not change from previous position.

Threat Appraisal

| Severity | Vulnerability |
| Intrinsic reward | Extrinsic reward |

Knowledge, Experience

Coping Appraisal

| Response efficacy | Self-efficacy |
| Response cost | |

Behavior intention

predictive of behavior.

Source: Xiao et al., 2014

Source: Guyer, Briñol, Petty, & Horcajo, 2019

Security surveys

- Taxonomy of Choice Architecture Techniques by Münscher, Vetter & Scheuerle (2016).

Category	Technique	Examples
A. Decision information	**A 1 Translate information** *Includes: reframe, simplify information*	• Simple information about burglary statistics and prevention measures
	A 2 Make information visible *Includes: make own behaviour visible (feedback), make external information visible*	
	A 3 Provide social reference point *Includes: refer to descriptive norm, refer to opinion leader*	• Police administers survey
B. Decision structure	B 1 Change choice defaults *Includes: set no-action default, use prompted choice*	
	B 2 Change option-related effort *Includes: increase/decrease physical/financial effort*	
	B 3 Change range or composition of options *Includes: change categories, change grouping of options*	
	B 4 Change option consequences *Includes: connect decision to benefit/cost, change social consequences of the decision*	
C. Decision assistance	**C 1 Provide reminders**	• Reminding about the occurrence of burglary
	C 2 Facilitate commitment *Includes: support self-commitment/public commitment*	

Security surveys

Effect
★★

- Very limited evidence
- 25% burglary decrease, 79% contemplating behaviour, 63% self-reported behaviour change

Mechanism
★★

- Nudging
- Based on bicycle locking behaviour studies

Moderator
★

- Target group: students
  - Neglect basic burglary prevention measures
  - Repeat victimisation risk: no consensus

Implemen-

tation
★

- Police administers the survey
  - Authority figure

Economic

cost

- Depends on who administers the survey

Security surveys

Recommendations:

- **Target a group that neglects basic prevention measures** (e.g., students) to increase the chance that they will contemplate their prevention behaviour; and

- **Allowing police to administer the security survey** could cause people to regard the information from the survey as more trustworthy.

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5. Burglary prevention awareness measures

Police advice

Police advice

- Police provide prevention advice to victims of burglary to prevent repeat victimisation

- Hot spots policing

- Super cocooning: advice to neighbouring residents of victims
  - Near repeat victimisation

Police advice

- Behavioural theory
  - Protection motivation theory
  - Fear of crime

Source: Xiao et al., 2014

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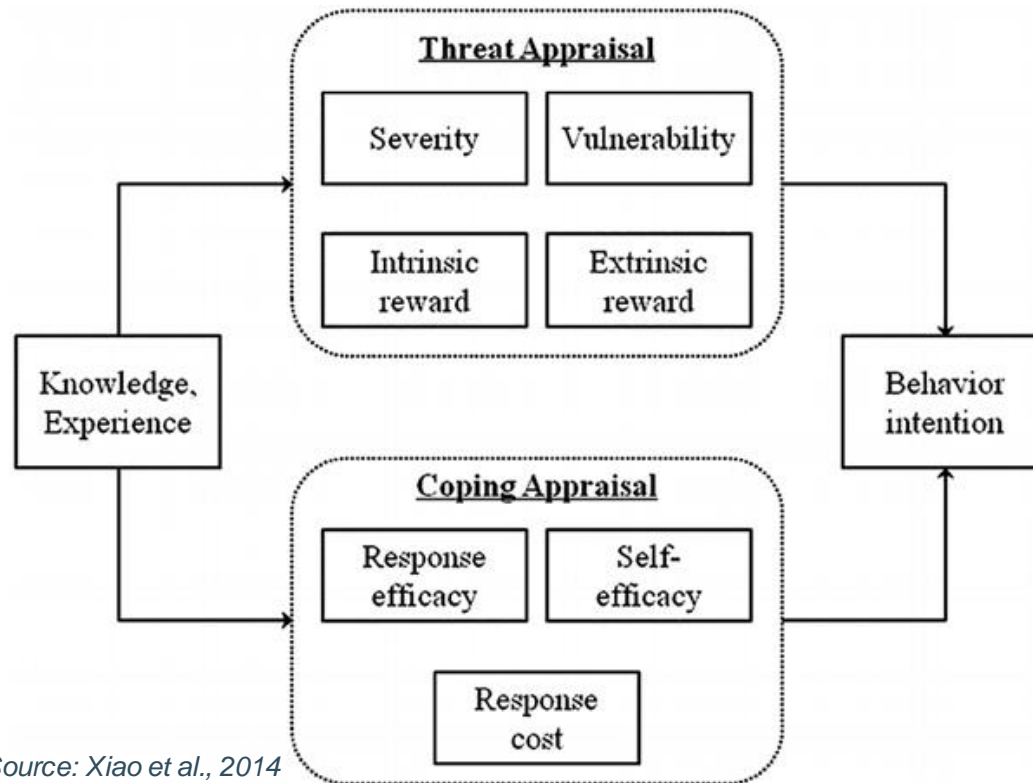
Police advice

- Taxonomy of Choice Architecture Techniques by Münscher, Vetter & Scheuerle (2016).

Category	Technique	Examples
A. Decision information	**A 1 Translate information** ***Includes: reframe, simplify information***	• Positve framing of prevention measures • Only discussing the most effective prevention measures
	A 2 Make information visible *Includes: make own behaviour visible (feedback), make external information visible*	
	A 3 Provide social reference point ***Includes: refer to descriptive norm, refer to opinion leader***	• Police as authority figure
B. Decision structure	B 1 Change choice defaults *Includes: set no-action default, use prompted choice*	
	B 2 Change option-related effort *Includes: increase/decrease physical/financial effort*	
	B 3 Change range or composition of options *Includes: change categories, change grouping of options*	
	B 4 Change option consequences *Includes: connect decision to benefit/cost, change social consequences of the decision*	
C. Decision assistance	C 1 Provide reminders	
	C 2 Facilitate commitment *Includes: support self-commitment/public commitment*	

Police advice

Effect
★★

- Limited evidence
- Average decrease of crime varies (+/- 5% - 30%)
- Limitations: part of a larger programme, no information on additional effects, hot spots policing effects =/= police advice effects

Mechanism

- No conclusive information

Moderator
★★

- Neighbourhood status: higher status = larger impact
    - Even though repeat victimisation is more prevalent in lower-status neighbourhoods
- Target: burglary victims (+ neighbours)
    - Increased victimisation risk within 400 metres of the burglary (depends on area)
- Closer to the time of the burglary = larger impact

Implemen-
tation
★★★

- Police officer compliance
    - Supervision by higher officers
    - Direct feedback and active involvement of supervisors
    - Train, Track, Feedback approach

Economic
cost

- Depends on police activities

Police advice

Recommendations:

- Use police advice in **high-status neighbourhoods** since it is more effective;

- Use police advice to **target both victims of crime and their neighbours** since it is effective in both situations;

- The police should give advice **close to the first burglary**, because the chance of repeat burglary decreases over time; and

- **The 'Train, Track, Feedback' approach** should be used to organise advice giving. Police officers are trained, tracked in the field, and then given feedback on their performance. Active involvement of supervisors is recommended.

# 5. Burglary prevention awareness measures

Police labels

Police labels

- Promotion of burglary prevention measures by awarding labels

- Inspection of building of adhesion to certain rules and regulations on security measures

- Two large projects
  - Secured by Design (UK)
  - Police Label Secure Housing (NL)

Police labels

- Behavioural theory
    - Conscious and unconscious thinking
    - Protection motivation theory

Source: Xiao et al., 2014
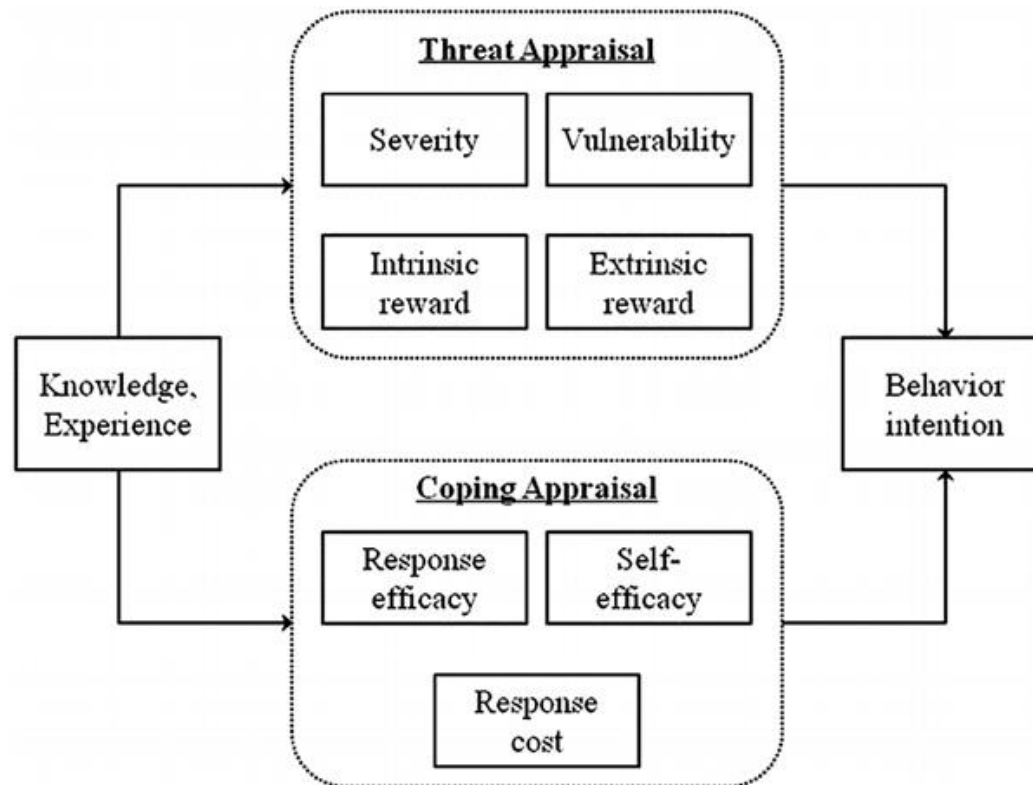
Police labels

- Taxonomy of Choice Architecture Techniques by Münscher, Vetter & Scheuerle (2016).

Category	Technique	Examples
A. Decision information	**A 1 Translate information** ***Includes: reframe, simplify information***	• Already set rules simplify information
	A 2 Make information visible *Includes: make own behaviour visible (feedback), make external information visible*	
	A 3 Provide social reference point ***Includes: refer to descriptive norm, refer to opinion leader***	• Label awarding actor as authority figure
B. Decision structure	**B 1 Change choice defaults** ***Includes: set no-action default, use prompted choice***	• Label as informal default option
	B 2 Change option-related effort *Includes: increase/decrease physical/financial effort*	
	B 3 Change range or composition of options *Includes: change categories, change grouping of options*	
	B 4 Change option consequences *Includes: connect decision to benefit/cost, change social consequences of the decision*	
C. Decision assistance	**C 1 Provide reminders** C 2 Facilitate commitment *Includes: support self-commitment/public commitment*	• Label as a well-known reminder

Police labels

Effect
★★★

- Effective in both programs
- 80% burglary reduction in NL (95% for new residences)
- Vehicle theft increase (148% increase in certain NL areas)
- Faster rise in crime after initial reduction (UK)

Mechanism
★★

- Clearly structured rules and regulations
  - 85% of Dutch people familiar with label
- Increasing social control and cohesion
  - Targeting individuals, but also larger complexes and neighbourhoods
  - Joint initiative
- Resident involvement
  - Attractive neighbourhoods → more involved residents → more alert residents

Police labels

Moderator
⭐

- Target group: citizens, urban planners and building practitioners
- Depends on location

Implemen-
tation
⭐

- Both projects have evolved and have a country-specific context
  - Label awarded by police or other actors
  - Involvement of Ministries and other political actors
  - Cooperation of local authorities

Economic
cost
⭐

- Cost for citizens: average cost of €1.500 (NL) or €82-236 (UK)

Police labels

Recommendations:

- The implementation of police labels requires **the involvement of political, police and local actors**;

- **Individuals, neighbourhoods and urban planners and building practitioners should be targeted**, since the impact of the label can depend on the target group; and

- Police labels are more effective when **the police awards** them.

- When implementing police labels, **vehicle theft** can increase in the area.

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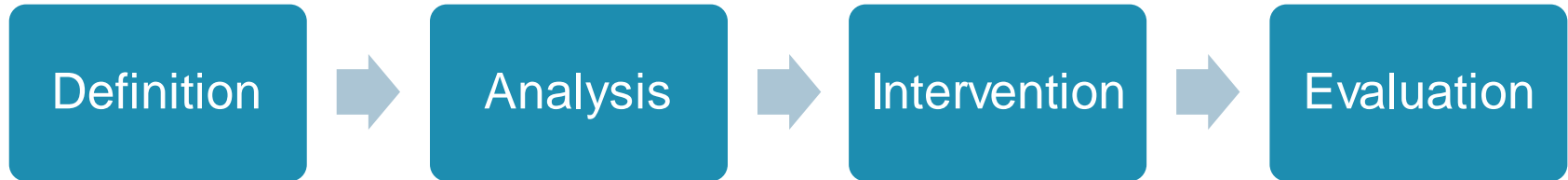
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6. Conclusions

Conclusions

- Behavioural insights can **enhance the traditional toolbox** to raise citizens' awareness and encourage prevention measures

- Behavioural instruments should be implemented as **part of a larger package** of various types of instruments

- Prevention measures can target both the intuitive and the reflective, **the conscious and the unconscious** decision making process

Final Conclusions

Definition	→	Analysis	→	Intervention	→	Evaluation

- Think before you talk

- Make it easy

- Context matters

- Be careful with fear!

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Thank you!

Any questions?

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References

- Benson, B. (2016). Cognitive Biases: A cheat sheet to help you remember 200+ biases via 3 conundrums. Retrieved April 26th 2022 from https://busterbenson.com/piles/cognitive-biases/

- College of Policing (s.d.). *Crime Reduction Toolkit.* Retrieved September 4th 2021 from https://whatworks.college.police.uk/toolkit/Pages/Toolkit.aspx

- Guyer, J., Briñol, P., Petty, R., & Horcajo, J. (2019). Nonverbal Behaviour of Persuasive Sources: A Multiple Process Analysis. *Journal of Nonverbal Behaviour, 43*(3), 1-29.

- Johnson, S., Tilley, N., & Bowers, K. (2015). Introducing EMMIE: an evidence rating scale to encourage mixed-method crime prevention synthesis reviews. *Journal of Experimental Criminology, 11*, 459-473.

- Kahneman, D. (2011). *Thinking, Fast and Slow*. London: Allen Lane.

- Münscher, R., Vetter, M., & Scheuerle, T. (2016). A Review and Taxonomy of Choice Architecture Techniques. *Journal of Behavioral Decision Making, 29*(5), 511-524; Thaler, R., & Sunstein, C. (2008). *Nudge: Improving Decisions about Health, Wealth and Happiness.* New Haven: Yale University Press.

- West, R., & Michie, S. (2020). A brief introduction to the COM-B Model of behaviour and the PRIME Theory of motivation. Retrieved April 26th 2022 from https://www.qeios.com/read/WW04E6.2

- Xiao, H., Li, S., Chen, X., … Okafor, C. (2014). Protection Motivation Theory in Predicting Intention to Engage in Protective Behaviors against Schistosomiasis among Middle School Students in Rural China. *PLoS Neglected Tropical Diseases, 8*(10), e3246.

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