

Making the Complex Communicable



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Overview

- There exists a near-universal preference for simplicity in both theory & practice of crime prevention
- Simplification tendency has gone too far – crime prevention really is complex – which researchers are finally acknowledging
- Simplification has had adverse effects on practice and theory
- We should therefore attempt to *reverse direction*, carefully and selectively, whilst maintaining creative tension between the two principles of simplicity and complexity
- This has a range of implications for theory, practice and above all how we communicate about crime prevention

The gift to be simple?

- Scholars in crime prevention are concerned to avoid *overcomplicating things* for politicians, policymakers, public and practitioners
- Simplicity is a valid principle but it brings many difficulties...



The gift to be simple?

- Simplicity in politics
 - Populist descriptions of preventive action have been associated with performance management agenda and simplistic politics
 - To a degree unheard of in other professions, theory & research can rarely move far away from everyday understanding
 - Crime prevention must continually adjust to a succession of slogans and changeable political fixes
- Simplicity in relations with public
 - Public apply ultimate political pressure, supply ultimate simplified views, amplified by media
 - Public recruited as implementers of prevention, or even partners – their own, everyday understandings naturally predominate and cannot be ignored by practice-oriented academics or professional crime preventers
 - Public's views can be *wrong* in evidentiary terms, *inappropriate* or merely *oversimple*

The gift to be simple?

- Simplicity and practice – some good reasons for simplicity
 - Culture clash between police and academics
 - Police have often recruited people with relatively limited education – together with professional focus on casework, this leaves them unfamiliar with analytic and aggregational statistical thinking
 - Specialised training in the conceptual foundations of crime prevention is restricted in scope, and few practitioners receive it

The gift to be simple?

The case of Situational Crime Prevention and Problem-Oriented Policing (SCP/POP)

- Some manifestations of simplicity
 - Practitioner material is brief, glossy, sloganised, simple diagrams, homely metaphors (ducks, wolves, grease)
 - Systematic Reviews give 1-dimensional answers to guide policy choice
 - Some academic research in SCP/POP is complex but majority is confined to simple language and especially to simple and piecemeal theory



The gift to be simple?

- Simplicity – an ideal vision?
- Concepts should be
 - Scientifically parsimonious, reflecting an essentially simple reality of causation of crime
 - Simple and robust enough to communicate to busy practitioners who may not be highly educated in researchers' styles of thought, and who receive only limited training
 - Simple and modest enough to convince their managers to invest in limited training and guidance
 - Simple, self-evident and frugal enough to appeal to funders of preventive action
 - But equally simple to robustly resist simplistic and/or erroneous, non-evidence-based views of politicians, media, lay people or practitioners

The gift to be simple?

- Simplicity seems an *adaptation* to both the intrinsic requirements of SCP/POP, and coping with external demands & constraints
- But – is the simplification track we are following actually *maladaptive*?
- **Key questions**
 - Can a crime prevention enterprise based on simplicity alone deliver?
 - Should we change course?



Implementation Failure

- No pervasive adoption of POP despite long effort and many claims to be implementing it
- Where a problem-oriented approach has been officially adopted, embedding it in organisation & culture remains limited
- Where POP activity undertaken, often done poorly
- Bullock et al. (2006) – UK entries to Tilley Award for POP projects showed **no trend of improvement in quality of entries over 1999-2005**, a time of both intensive and extensive effort in communicating, implementing and funding POP principles
- But implementation failure afflicts *all* kinds of crime prevention



Implementation Failure

- Many explanations of implementation failure, including these **knowledge-related** ones:
 - Limits to the depth and quality of practitioners' understanding of the causes of crime and thus to their interpretation of the specific crime problems they analyse
 - Inadequate local supply of people with the necessary skills to develop and implement sound and well thought through projects
 - Training limited in quality and quantity
 - Career development traditions of generalism and 'moving on' among police and local government officers
 - Limitations in the information that evaluations collect and synthesise

Confessions of complexity



Confessions of complexity

- Knutsson & Clarke 2006 *Putting theory to work. Implementing Situational Prevention and Problem-Oriented Policing*: every chapter mentions complexity:
 - **Intro** – even seemingly straightforward interventions can be difficult to implement for a variety of technical, managerial & social reasons
 - **Laycock** – complex picture of rights, responsibilities, vulnerabilities of institutions/individuals able to beneficially influence causes of crime
 - **Scott** – complexity of implementation as one explanation of why problem-oriented initiatives succeed or fail
 - **Brown** – evaluation of UK government's Reducing Burglary Initiative showed interventions appearing simple on paper could be deceptively complex and time consuming when it comes to implementation stage
 - **Knutsson** – success of Norwegian project on controlling illegal taxi services partly due to unusual absence of technical complexity
 - **Hough** – systematic misjudgement about complexity of the preventive enterprise – complexities in achieving institutional legitimacy and communicating social meaning within social control agencies – 'modernisation project' of government is ill-equipped to handle it
 - **Homel** – overarching cause of implementation failure in the UK Crime Reduction Programme was failure to treat the programme and all its levels as a system
 - **Bowers & Johnson** – complexity of the implementation process necessitates a risk management framework to help practitioners avoid implementation failure
 - **Pease** – complex entities that individuals, firms or government departments must understand in implementing plans – other individuals, firms and government departments – lead to enormous uncertainties between intent and outcome
 - **Tilley** – knowledge to be conveyed for Problem-Oriented Policing to succeed is much more complicated than first assumed. Requirement to supply relatively complex guidance to 'reflexive practitioners'

What is this demon, complexity?

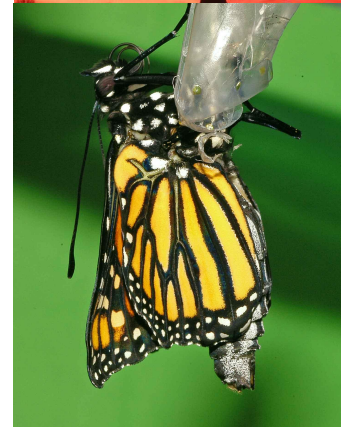
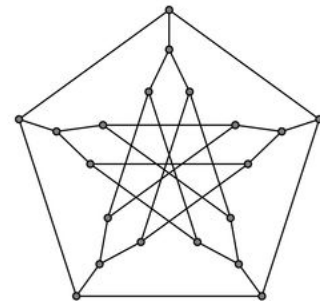
- **Quantitative complexity**

- An object, process or system having many components, richly interconnected with one another and outside world
- Linear, increasing additively or combinatorially



- **Qualitative complexity**

- Interactions and emergence of causal properties
- Complex adaptive systems
 - Usually non-linear
 - Many components are adaptive agents with own goals, so deliberate perturbation of the system in one place (e.g. injecting a crime prevention intervention) may have unforeseen and undesired effects as the agents make their own adjustments



Complexity of crime prevention illustrated

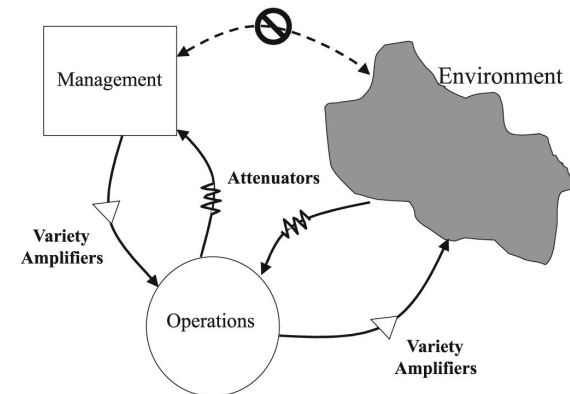
- Quantitative complexity
 - Sheer exuberant variety of intervention methods
 - Classifying crime problems generates thousands of cells
 - Causes of crime are many, and act at different ecological levels such as individual, family, community or society
 - Practical realisation of methods – different ecological levels of action, institutional settings, geographical scales
- Qualitative complexity
 - **Interaction** – context dependence of replication
 - **Emergence** – networks, markets and opportunity structures
 - **Complex adaptive systems**
 - Dynamic interpersonal interactions within micro-situation
 - Criminal counter-moves, arms races etc on larger/longer scale
 - Implementers as well as criminals act as adaptive agents
- **QED** – our knowledge, and knowledge management systems, must be capable of handling this richness of information

Accepting complexity

- Simplicity of crime prevention is an adaptation to particular circumstances – but it may constrain progress and is probably maladaptive now
- We should therefore accept complexity – but this poses several challenges:
 - **Scale** of knowledge to be assembled requires practical ways of organising it
 - Large **gaps** in knowledge
 - But combinatorial complexity means knowledge gap can't be filled by cumulative research effort – a **Malthusian** problem: geometric v arithmetical increase
 - **Innovation** is important
 - Practitioners have to **improvise** to make up knowledge deficit
 - What we know needs constant **replenishment** due to co-evolution of crime & crime prevention
- How should practice-oriented academics respond?
 - Seek proper tension between simplicity & complexity in all aspects of prevention
 - They are not exact opposites – a little complexity can actually *simplify* things
 - Parsimony is actually about being as simple as possible *but no simpler* (Einstein)
 - So where nature demands more complexity, it should be incorporated; but this should be done from the simplest starting position

Appropriate complexity

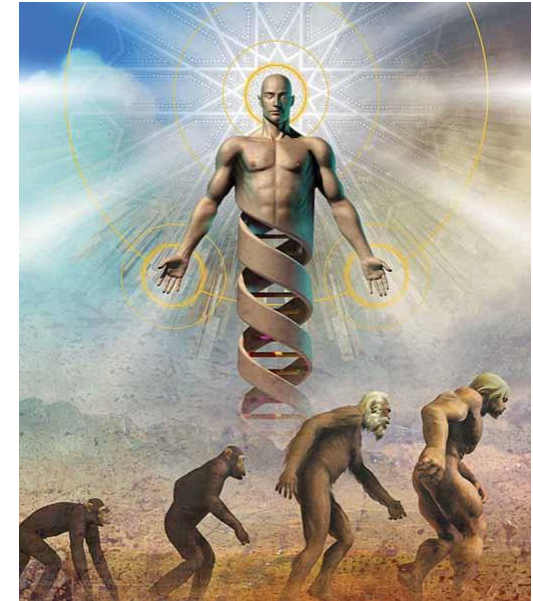
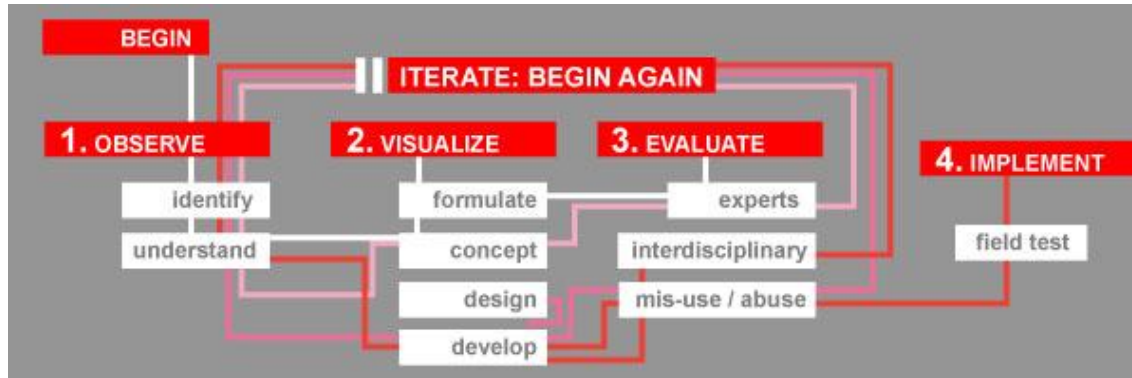
- Ashby's *Law of Requisite Variety*
 - It takes complexity to control complexity
 - In designing a *control* system to effectively influence some larger *real-world* system, the former requires sufficient complexity of its own to handle the latter
 - Our concepts of crime and crime prevention must therefore be of *appropriate complexity* to handle the real complexity out there, and our communications of knowledge to practitioners must be of appropriate complexity to get the knowledge across
 - It is futile dumbing down **crime prevention knowledge** into slogans and rapid-read case studies to aid communication to practitioners, if these cannot inspire actions smart enough to do good & avoid harm
 - But equally futile if **practitioners lack the expertise** to understand, critique and assimilate that knowledge so they can operate at a sufficient level of sophistication to handle their work



Source: Adapted from Beer (1985)

Adapting crime prevention to appropriate complexity – by Intelligent Design

- In case you were wondering... not this >
...but this v



- Design, in problem-solving terms, works best when its 'requirements capture' can identify and sharply declare any *contradictions* – e.g. between *simplicity and complexity* – and maximise on *both* conflicting requirements by creativity & ingenuity rather than half-hearted compromise
- The fundamental strategy is to apply Ashby's Law and use a *small* injection of *well-designed* complexity into our *frameworks* to tame the *greater and more chaotic* complexity *out there*

How do we redesign crime prevention, to adapt it to appropriate complexity?



Being generative

- To close the Malthusian gap between supply of knowledge and demands of complex reality, our theory and our process models have to help practitioners improvise, adapt and innovate to new contexts and new problems
- This can only be done if they are *generative*
- In the same way that a language's grammar and vocab enable an enormous number of comprehensible sentences to be uttered, our theory and process models, plus our evidence of what works, must enable practitioners to generate plausible, 'grammatical' proposals for action and then refine and adjust them through trial and feedback

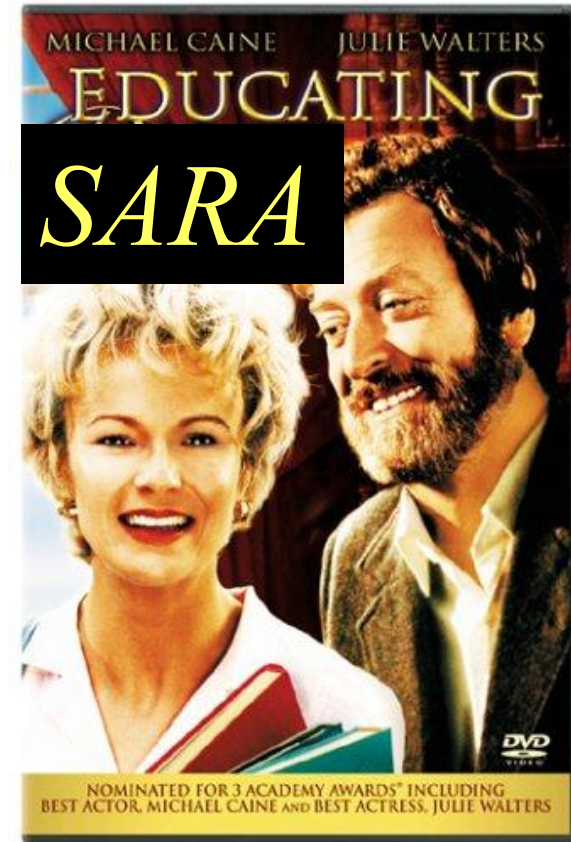


Helping theory to engage with complexity

- Focus on **causal mechanisms** – which have generative properties
- **Integrate theories** – eg RAT, RCT – each is individually simple but every individual practitioner (and student) gets the complex task of fitting them together to guide practice and research – this is spurious complexity masquerading as simplicity
- Consider using **integrating-frameworks** like Conjunction of Criminal Opportunity, or Wikström's Situational Action Theory
- Cover **interactions and emergence** – use computer simulation to explore

More complex process models: educating SARA?

- Process models need to help practitioners
 - **Select** from knowledge base
 - **Replicate** and/or
 - **Innovate**
- This requires much more detail, and progressive, branching structure to manage it, than SARA offers
 - especially Response stage
- Generative, combinatorial innovation is enabled by
 - Breaking action into '**interchangeable elements**'
 - Parallel description of action in terms of **practical method** and **generic principles or mechanisms**
- **5Is framework** is one deliberately designed alternative solution to handling greater detail



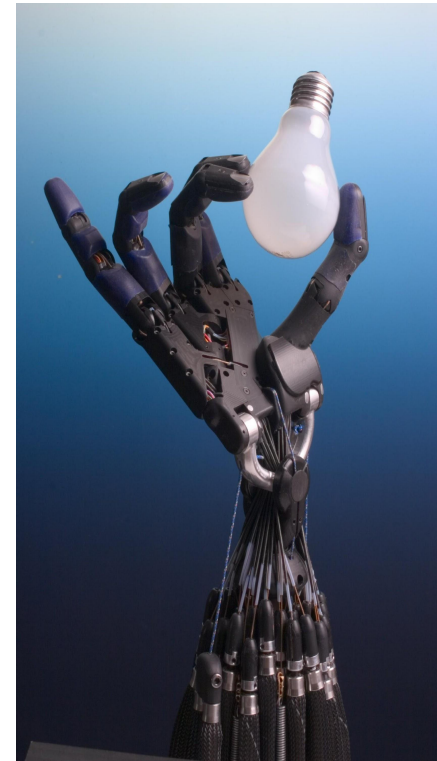
A learning engine

- Theories and process models are already learning engines – they cumulate and evolve to track reality more accurately, and with widening scope
- But this can be enhanced
- Key principles of Adaptive Learning – Piaget
 - Assimilation (new knowledge fitted into existing frame)
 - Accommodation (fit existing frame around new knowledge)
- Example – 25 techniques of Situational Prevention
 - *New method - target softening*
 - Do we:
 - Jam it under target hardening? (assimilation)
 - Make a new category or revise what we call existing category? (accommodation)



Articulating complexity

- Extracting **tacit knowledge** by
 - Improving our terminology (if terminology is confusing, vague and generalised, no wonder practitioners are not very articulate)
 - Developing systematic headings for capturing and retrieving knowledge
- Using flexible, generative language, not trying to describe a rigid sequence of preventive actions
- Explicit attention to *discourse* – technical, functional etc
- Communicating complexity by graphic & interactive design



Educating practitioners to cope with complexity

- While **designing our frameworks** to handle the real complexity of prevention and our communications to convey it in as user-friendly and efficient a way as possible to practitioners and fellow academics, we must simultaneously raise the **level of complexity practitioners can cope with**

Educating practitioners to cope with complexity

- Practitioners should be more like **consultants** with generative principles and processes at their fingertips and plenty of knowledge of the diversity of preventive methods; and less like **technicians** with a limited diagnostic skill and equally-limited repertoire of responses
- Education & training must therefore be at appropriate level
- Our theoretical models of crime causation and preventive intervention, process models, and capacity for generating and describing action through appropriate language, must together come to constitute an integrated mental **schema**
- This schema must get into practitioners' heads early in their career, so it becomes the way they view the world, generate innovative action and efficiently assimilate and accommodate to new experiences – just as Piaget describes!

Conclusion – a reassuring message?

- Crime and its prevention are undoubtedly complex
- But the complexity *can be tamed* provided we have developed, and continue to develop, suitable frameworks and languages to handle and communicate it within research and practice, and provided we adapt our institutions to support this
- This requires a high level of **investment** in concepts, capture of knowledge through evaluations, and communication of knowledge and skills through training, guidance and other infrastructure to deliver a high **yield** in terms of successful **performance** in crime prevention
- But *don't* blunt the leading edge of research by tying it too close to practice!

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