Rebuilding a Resilient Britain: Crime Prevention

Report from Areas of Research Interest (ARI) Working Group 4

Chairs: Paul Taylor, Lancaster University
   Rachel Tuffin, College of Policing, What Works Centre for Crime Reduction

Facilitated by:
Rachael Creed, Government Office for Science
Annette Boaz, Government Office for Science

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Foreword

The COVID-19 pandemic presents a fundamental challenge to our society, economy, and ways of living. We need to ensure that our response to these challenges is informed by the best possible evidence, by engaging with the right stakeholders. As a first step toward this goal, the 'Rebuilding a Resilient Britain' programme of work was launched in July 2020 to bring together researchers, funding bodies and policy makers to identify evidence and uncover research gaps around a set of cross-cutting Areas of Research Interest.

ARIs were initially developed in response to the recommendations of the *2014 Nurse Review of Research Councils*, which called on government departments to communicate clearly where their research objectives lie. The ARIs take the form of an annually updated list of priority research questions, which invite the academic community to engage with government departments to inform robust evidence-based policy making.

With the advent of the COVID-19 pandemic, however, it became clear that the societal issues affecting Britain's recovery over the medium- to long-term cut across departments. The ESRC/GOS ARI Fellows therefore worked with the CSAs and Council for Science and Technology to identify a set of ARIs relevant across all departments and sectors. Under the meta-themes of **Rebuilding Communities**, **Environment and Place**, and **Local and Global Productivity,** each led by two CSAs, nine Working Groups were formed:

Rebuilding Communities led by Robin Grimes (MoD Nuclear CSA) and Osama Rahman (DfE CSA)	**Environment and Place** led by Robin May (FSA CSA) and Andrew Curran (HSE CSA)	**Local and Global Productivity** led by Paul Monks (BEIS CSA) and Mike Short (DIT CSA)
1. Vulnerable Communities	5. Supporting Lower-Carbon Local Economies	8. Local and National Growth
2. Supporting Services	6. Land Use	9. Trade and Aid
3. Trust in Public Institutions	7. Future of Work	
4. Crime Prevention		

With input from the Universities Policy Engagement Network, UKRI, the What Works Centres, and the National Academies, each Working Group was populated with subject experts and representatives from funding bodies and government departments.

The working groups met several times over the summer and used their networks to:
   a. identify a diverse range of existing or ongoing research,

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    b. synthesise evidence which can be quickly brought to bear on the issues facing departments

    c. identify research gaps in need of future investment.

This report represents the culmination of the work of one of these Working Groups. The expedited timeframe of this work, along with their specific areas of expertise, led to some variation in how each group approached the task. It should be noted that this document represents the views of the Working Group members and is not indicative of government policy.

As well as providing deep expert reflection on the cross-cutting ARIs, it is hoped that these reports, and the work that led to it, will prompt further collaboration between government, academia, and funders. Working across government and drawing from the extensive expertise of our academic community will be essential in the recovery from the COVID-19 pandemic, to rebuild a resilient Britain.

Kathryn Oliver and Annette Boaz
ESRC/GOS ARI Fellows, on behalf of the ARI team within GOS

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Foreword

List of acronyms

AI	Artificial Intelligence
ARI	Area of Research Interest
AHRC	Arts and Humanities Research Council
BAME	Black, Asian and Minority Ethnic
BBSRC	Biotechnology and Biological Sciences Research Council
BEIS	Department for Business, Energy and Industrial Strategy
CBI	Confederation of British Industry
CJS	Criminal Justice System
CO	Cabinet Office
COVID-19	Coronavirus Disease 19
CSA	Chief Scientific Advisor
DCMS	Department for Digital, Culture, Media and Sport
Defra	Department for Environment, Food and Rural Affairs
DfE	Department for Education
DfT	Department for Transport
DH	Department of Health
DHSC	Department of Health and Social Care
DIT	Department for International Trade
DWP	Department for Work and Pensions
EPSRC	Engineering and Physical Sciences Research Council
ESRC	Economic and Social Research Council
FCDO	Foreign, Commonwealth and Development Office
FSA	Food Standards Agency
GCSA	Government Chief Scientific Advisor
GOS	Government Office for Science
HMRC	Her Majesty's Revenue and Customs
HMT	Her Majesty's Treasury
HO	Home Office
HSE	Health and Safety Executive
MHCLG	Ministry of Housing, Communities and Local Government
MoD	Ministry of Defence
MoJ	Ministry for Justice
MRC	Medical Research Council
NERC	Natural Environment Research Council
NGO	Non-Governmental Organisations
NICE	The National Institute for Health and Care Excellence
ONS	Office for National Statistics
PHE	Public Health England
R&D	Research and Development
SAGE	Scientific Advisory Group for Emergencies
SME	Small and Medium-sized Enterprises
STEM	Science, Technology, Engineering, and Mathematics
STFC	Science and Technology Facilities Council
UKRI	UK Research and Innovation

Contents

1. Chair's introduction

Crime prevention ARIs were recognised by 17 departments because crime affects, and is affected by, issues of education, health, welfare, and social cohesion. Efforts to tackle the ARIs are therefore best served by **cross-departmental collaborations** that take a holistic view, sensitive to the interdependencies among departmental efforts.

A priority for these efforts should be reducing crime opportunity. This requires policy supported by **R&D that identifies today's and tomorrow's incentive structures for crime**, so that situational opportunity can be reduced, and interventions can be developed, evaluated, and implemented. Work on crime futures is central to this effort and would benefit from national coordination and consistent attention.

Responding to this challenge requires policy and R&D programmes that:
- **look beyond simple labels to target behaviour**, so prevention tackles criminality at the margins of core areas of policy focus. As an example, tackling 'serious organised crime' needs action to prevent tacit facilitation of money laundering as well as a focus on gangs;
- **engage with the overlap between offending and victimisation**, so that developed interventions recognise how offender vulnerability such as addiction and exploitation fuels criminality;
- **consider procedural justice - people's experience of a fair criminal justice process - as a driving factor**; and,
- **prioritise investment in, and facilitation of, focused evaluations** rather than broad reviews and conceptual studies.

To understand crime trends effectively requires judicious use of data, recognising that **avoiding biases in data and improving data quality via social theory are key to good analytics**. Current efforts are opportunist, using the data available rather than the data that is needed. Investment must engage domain experts as well as data scientists to ensure generalisable and ethical solutions. **Open data and regional innovator-stakeholder partnerships** would deliver context-relevant impact for many ARIs.

There should also be **more focus on exploiting the existing research evidence, on evaluation of science-based practices and policies and on replication**. For most ARIs, the science offers a rich descriptive understanding of 'who' and 'what', though this is not always used to inform policy, but less insights into 'when' and 'why' solutions work, and insufficient replication of innovative studies.

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2. How the evidence was identified and collated

ARIs were identified by departments and prioritised by CSAs. The ARI Fellows presented a set of priority areas to the CSA network and the GCSA who identified which topics would be of most use to take forward. The Crime Prevention Working Group were asked to respond to 24 ARIs reported by 17 departments (BEIS, CO, Defra, DfE, DFT, DH, DHSC, FSA, HMRC, HMT, HO, MHCLG, MoD, MoJ, PHE). It did so by: (1) speaking with responsible owners to determine the focus of the ARIs and what value our effort could bring; (2) soliciting responses from 34 experts to questions about what they considered, per ARI, the seminal resource, the focus of effective prioritisation, a take-home message, and effective next steps; (3) examination of relevant work commissioned and undertaken by the College of Policing and the AHRC/ESRC; and, (4) discussions with Working Group members to synthesise and agree the key findings from these data.

3. Key messages

3.1. Limiting criminal opportunity
(ARIs 1, 2, 5, 7, 8, 10, 11, 15, 16, 18, 19, 21)

Evidence on areas from reoffending to cybercrime emphasise the value of identifying and limiting criminal opportunity. Crime opportunities are the leading causes of crime trends, so adjusting incentive structures is central to their reduction.[1] We advocate R&D and action that promotes technical resilience, in the way security innovation reduced vehicle theft by 80-90%[1], and social resilience, in the way community-guided initiatives have addressed local incentives for violent extremism [2] and human trafficking.[3] There is an opportunity for research to underpin inter-departmental collaboration on priority crimes. For example, in addressing cybercrime, BEIS could use market-based incentives and regulatory enhancements, DCMS could expand their crime risk assessments, DfE could advocate risky behaviour reduction curricula, and HO could invest in problem-oriented cyber policing.

A critical aspect of managing crime opportunity is understanding how the landscape of crime is changing. Academia [4] and government [5] have produced valuable work on futures, but this would benefit from coordination to derive a holistic picture and to facilitate impact. To get ahead of the curve, departments should prioritise work to anticipate and stem new crime opportunities according to their sectoral responsibilities. Adopting an established framework such as PESTLE (Political, Economic, Social, Technological, Legal, and Environmental) [6] when doing so, could encourage joined-up thinking about current knowledge and research gaps.

Furthermore, it is important to invest in fundamental research on how regulation and online/offline intervention work, especially given evidence that some algorithmic methods are fuelling rather than inhibiting extremism. In areas such as serious

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organised crime/counterterrorism disruptions where research is in its infancy, this would rapidly add value to investigative practice.[7] Ultimately, in relation to online offending, this should prompt strategic judgements about where to focus prevention efforts, which may feed discussions about an independent regulatory body.[8] For some offence types, reducing peer-on-peer influence via education methods might be the most effective and cost efficient activity.

There is an urgent need to explicate the direct (e.g., evolution of court sentencing) and indirect impacts (e.g., domestic abuse) of COVID-19 on crime. Research should consider *inter alia* financial stress, inequality, relationship breakdowns, changing technology use, and the disproportionate impacts on vulnerable, minority and disadvantaged groups. This may be achieved by: (1) using existing data systems to identify changes in offending and victimisation and their causes;[9] (2) researching the multi-dimensional nature of inequalities and their role in fuelling crime; (3) shifting from a primary emphasis on youth offending to an age-graded appraisal of offender populations, such as aging populations of repeat service users with complex health needs. This work should coordinate with The National Police Chiefs' Council Operation Talla Recovery and Reform programme.[10]

In summary we need to:
- **Support, coordinate and exploit futures analysis; and**
- **Consistently identify and address today's and tomorrow's incentives for crime.**

3.2. Ethical exploitation of data
(ARIs 2, 3, 4, 5, 6)

Work on behavioural and crime analytics show the valuable role of data in addressing many ARIs.[11] For this impact to be realised it will be necessary to research sources of bias and measurement error,[12] innovate to develop methods that reduce these biases, and make such tools resilient to internal and external threats; all in an ethical way. To be effective, this research must ensure domain experts, who understand how the data is created and what it "means", work closely with data scientists. This need is especially pertinent to real time data methods; innovative prediction is useless if the underlying data is flawed or biased, and failure to invest in data collection can undermine best-intended efforts. A shift in aspiration is needed from asking "what can we do with existing data" to "what data do we need to do what we want".

Many group contributors gave accounts of mature solutions that have yet to be adopted into government practice.[13] We suggest capitalising on the agility of small teams by creating a structured way for academia/industry to engage, extend current knowledge, and work jointly toward a concrete outcome. Data hubs distributed across the country, for example, could work with local authorities, reduce duplication and increase national synergies. This initiative might couple with investment in safety

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technology, which the Government has identified as a world-leading area of UK expertise.[14]

A priority for data focused ARIs should be the creation and support for open platforms.[15] Open platforms reduce the time spent in data collection, cleaning, and storage phases of projects, and they allow for easier entry for topic experts. Well implemented, the platforms may also support knowledge sharing (e.g., data, methods, policies) across stakeholders, as well as provide for real-time monitoring and evaluation, and the prediction of crimes. Where data cannot be made open source, efforts should be made to make it available through secure facilities. Several universities have invested in secure facilities (e.g., Bath, Lancaster, UCL, Warwick) but their use is limited due to concerns over data sharing. Another focus should be working to speed up and expand access to data through safe havens (e.g. Administrative Data Research UK), which offer enormous potential but are often administratively burdensome and slow.

In summary we need to:
- **Encourage more partnerships to support the application of existing research**
- **Improve data quality, and access through open platforms; and**
- **Use partnerships and domain experts, apply theory and innovate to avoid bias in analysis.**

3.3. Evaluative research
(ARIs 1, 2, 5, 7, 11, 13, 15, 16, 20)

Contributors pointed to robust research on crime detection and prevention across various crimes. Yet, this evidence is focused on understanding criminality rather than evaluating solutions.[16] As a result, departments may reasonably feel rich with theories but bereft of a strong evaluative evidence-base on which to make policy decisions. Overcoming this issue requires greater investment in, and facilitation of, focused evaluations rather than broad reviews and conceptual studies.

An example is the need for a systematic examination of anti-disinformation methods, over studies of what constitutes disinformation, or blind attempts to build algorithms. Only with this evidence can departments be proactive in developing, for example, options to counteract anti-vaccination misinformation. Similarly, evaluation in the context of offender management should take account of the heterogeneity of the population being studied, "how" interventions work, and at what cost.[17]

A need was also identified to promote and encourage replication studies within government and amongst research funders. R&D programmes tend to limit their

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definition of innovation to the original test of a specific intervention or practice, when there is equal value for policy in repeated testing across sites, since this establishes the generalisability of the effect across contexts.

In summary we need to:

- **Increase evaluation of science-based practices and policies; and**
- **Recognise, in policy design, the value of replication to an evidence-based system.**

3.4. Holistic evidence-based delivery in the Criminal Justice System and beyond
(ARIs 12, 13, 14, 15, 16, 18)

Reducing criminality requires a holistic approach, from education, to early prevention, to offender management, to employment. Efforts to understand the whole will inform policy that is sensitive to the connections among moving parts, underpinning efforts to build more interconnected crime prevention strategies across government.

Evidence on ARIs related to criminal justice highlight the barriers to, and benefits of, a holistic approach to justice and crime prevention.[18] Available research demonstrates the complex systems involved in justice, such as the justice gap experienced by survivors of Gender Based Violence, and those experiencing mental health problems, and the overlap between offender and victim definitions. The degree to which delivery will be successful against these ARIs is thus a function of the extent to which their interconnections are understood and factored into policy and practice implementations. Understanding this will require synthetic and original R&D. A good exemplar are the early interventions being trialled to prevent vulnerable people from entering the CJS as well as other services that divert from prison.

A systematic review of evidence, supported by recent COVID-related research,[19] highlights the critical importance of procedural justice—people's experience of a fair and respectful criminal justice process—to the holistic approach. When people receive explanations, are able to put their point of view, and experience fair and respectful treatment, it increases the perceived legitimacy of the system and encourages future compliance with the law, regardless of outcome, from police contact to prison.

Building on this framework, efforts to stop reoffending should seek to improve the physical environments of prisons [20] (e.g., controlling noise, increasing green spaces and daylight [21]), the social environment of prisons (e.g., decency, fairness, use of authority [22]) and should develop our understanding of prison's effects on vulnerable populations (e.g., children [23]). Evidence suggests doing so will not only make prisons a less risky and stressful place (e.g., reducing the levels of drugs, trauma,[24] and violence) but also reduce reoffending. This link between quality of prison life and reoffending requires further testing.[22]

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Recent government reviews [25] and judicial primers [26] highlight the value of forensic techniques to the justice system, and the Lord's select committee [27] recommendation for a national centre for forensic research and contribution would stimulate sector investment in this area and limit the problem caused by force tendering to private companies, which will not invest in research. A recent UKRI report summarises three areas where investment is vital: digital forensics (trying to cope with volume); advances in DNA analysis for efficiency; and investment in comparative databases.

In summary we need to:
- **Build more inter-connected crime prevention strategies across government and partners; and**
- **Continue to use, and build, the evidence on procedural justice, including in prison.**

4. Evidence Gaps

The working group identified evidence gaps for many ARIs, which are individually and collectively listed in Appendix 4. After discussion, the group identified several priority areas, which have been edited together by the co-chairs as follows.

4.1. Determine how government department levers best pull together

Crime problems are inherently multi-dimensional, hence crime prevention ARIs reach across 17 departments. Joint working on holistic, evidence-based solutions will increase impact and value-for-money, but there is insufficient understanding of the 'gestalt' of crime prevention, that is, how the investments and actions of departments complement one another.
- A programme of crime prevention research should specifically seek to understand the inter-connections between government department levers; how investments and activity in one area can affect or support change in another. There are a number of specific themes which could be used to explore these links, such as tackling disinformation and cyber-bullying.

4.2. Identify which crime opportunities drivers, including COVID-related change, require the most urgent action. Working with the National Police Chiefs' Council, determine how data can be curated to support this work

There is an urgent need to distil the impact of COVID on the "opportunity space" of crime and its wider consequences in terms of justice inequalities. UKRI funded work provides a useful basis for synthesis and further work. Investment must balance curation of useful data with tools for assessing the data. Current efforts are opportunist, using the data available rather than the data that is needed. Key priorities would be:
- Review of the changing patterns of crime (temporal and spatial) by crime seriousness.

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- Analysis of the offender profile and overlaps with other areas of vulnerability (e.g. health and welfare).
- Identifying triage markers and optimum points of 'early intervention' to inform policy expenditure (through an inequalities lens).

4.3. Not enough interventions are evaluated and replicated, have shown to work at scale, and are applied in practice

Promoting evaluation presents many challenges but a successfully implemented 'theory-solution-test' culture would fundamentally improve the cost effectiveness evidence base for government. Single evaluations are not sufficient, hence either replication should be within the remits of the Research Council, or government should handle this type of funding.

The value of synthesis should also be recognised in funding. Several 'what works' initiatives and policy-focused research centres address pull-through, but a wider, strategic effort is needed including all types of research. Further efforts to translate into practice rich AHRC/ESRC funded research on ARIs would be valuable, for example.

- Evaluation, replication, scale up and roll out should all be considered as a standard part of new intervention funding.

5. References

The following references give examples to illustrate the summary. Further information and citations can be found in Appendix 4.

[1] See the evidence from Professors Graham Farrell, Shane Johnson, Michael Levi, and Susan McVie in particular, e.g., Farrell, G., Tilley, N., & Tseloni, A. (2014). Why the crime drop? *Crime and Justice, 43,* 421-490.

[2] The European funded BRaVE project (http://brave-h2020.eu) hosts a database of policies and initiatives that have proven effective across Europe. One of the interesting aspects of the BRaVE database is the variation in initiatives across – and even within – countries as local representatives respond to different issues.

[3] See the AHRC/ESRC portfolios provided to the Working Group for many examples.

[4] For example, the Centre for Research and Evidence in Security Threats, Lancaster University, and the Dawes Centre for Future Crime, UCL

[5] For example, the College of Policing, and Dstl

[6] Johnson, S., Ekblom, P., Laycock, G., Frith, M., Sombatruang, N. and Rosas Valdez, E. (2019). '*Future crime'* in R. Wortley, A. Sidebottom, N. Tilley and G. Laycock (eds), *Routledge Handbook of Crime Science* (pp. 428-446). Milton Park: Routledge.

[7] The recently produced 'CT intervention framework [Official Sensitive]' and its underpinning synthetic review of evidence is a superb example of what is possible

[8] Crown (2019). *Online Harms White Paper*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/793360/Online_Harms_White_Paper.pdf

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9   Administrative data sources about offenders: The Ministry of Justice Data First data linkage project (magistrates court, police data, etc for England and Wales) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908466/data-first-user-guide.pdf; Scottish Offenders Index (current plans for data linkage to health, census, education and other data) https://www.gov.scot/publications/reconviction-rates-scotland-2016-17-offendercohort/pages/4/; Scandanavian (and other European) register data that provide exemplars in how data linkage to a wide range of databases can improve theory and policy, https://www.ssb.no/en/sok?sok=offender

10 Op Talla Recovery and Reform that is seeking—in collaboration with the Home Office, National Police Chiefs' Council, The College and other police system partners—to develop evidenced based understanding of the learning, risks, opportunities and impact of COVID-19 on crime and policing. This is both to help improve the ongoing response as the challenges posed by COVID-19 evolve as well as to inform options for reform and renewal in the longer term thereby ultimately supporting improved public service delivery.

11 Babuta, A. (2017). *Big data and policing. An assessment of law enforcement requirements, expectations and priorities*. The Royal United Services Institute occasional paper, September 2017.

12 ESRC has recently funded the project 'Re-counting crime: New methods to improve the accuracy of estimates of crime' (principle investigator: Ian Brunton-Smith) aimed at studying sources of measurement error in crime data and combining crime data sources to improve the reliability of estimates of crime.

13 For example, OSCAR (Open Source Communications Analytics Research) as a tool offering near-real time open source insights: http://upsi.org.uk/oscar/. See also https://www.cardiff.ac.uk/__data/assets/pdf_file/0008/1462373/M2M-Report-Final.pdf; https://crestresearch.ac.uk/resources/soft-facts-full-report/; COSMOS for wide access to social media: socialdatalab.net, and used on real-time event detection (case study London riots https://dl.acm.org/doi/10.1145/2996183), detecting crime offline using online social media (https://academic.oup.com/bjc/article/60/1/93/5537169) and hate speech (https://dl.acm.org/doi/10.1145/3324997).

14 DCMS (2020). Safer technology, safer users: The UK as a world leader in safety tech. University of East London. Consider, for example, Nhan, J., Huey, L., and Broll, R. (2017). Digilantism: An analysis of crowdsourcing and the Boston marathon bombings. *British Journal of Criminology*, *57,* 341–361. https://doi.org/10.1093/bjc/azv118; Vomfell, L., Härdle, W. K., & Lessman, S. (2018). Improving crime count forecasts using Twitter and taxi data. *Decision Support Systems, 113,* 73-85. https://doi.org/10.1016/j.dss.2018.07.003; Solymosi, R., Buil-Gil, D., Vozmediano, L., & Sousa Guedes, I. (2020). Towards a placebased measure of fear of crime: A systematic review of app-based and crowdsourcing approaches. *Environment and Behavior*. https://doi.org/10.1177/0013916520947114

15 Williams, M. L., Burnap, P., and Sloan, L. (2017). Crime sensing with big data: The affordances and limitations of using open-source communications to estimate crime patterns. *British Journal of Criminology, 57,* 320–340. https://doi.org/10.1093/bjc/azw031

There are useful exceptions. For example, the ESRC funded evaluation of Domestic Abuse, Stalking, Harassment and Honour risk assessment of predicting domestic violence a good example as it shows when the method is and is not useful: Turner, E., Medina, J., and Brown, G. (2019). Dashing Hopes? the Predictive Accuracy of Domestic Abuse Risk Assessment by Police. *British Journal of Criminology*, *59,* 1013–1034. Other exceptions include evaluations of specific deterrence measures: Ariel, B., Englefield, A., & Denley, J. (2019). I heard it through the grapevine. *The Journal of Criminal Law and Criminology, 109*, 819-867; Crocker, R., Webb, S., Skidmore, M. *et al.* Tackling local organised crime groups: lessons from research in two UK cities. *Trends Organ Crim, 22,* 433–449; Levi, M., Doig, A., Gundur, R., Wall, D., & Williams, M. (2017). 'Cyberfraud and the Implications for Effective Risk Based Responses: Themes from UK Research', *Crime, Law and Social Change, 67,* 7796. Mackenzie, S., &

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Hamilton-Smith, N. (2011). Measuring police impact on organised crime. *Policing: An International Journal of Police Strategies & Management.*

16   https://whatworks.college.police.uk/toolkit/Pages/Toolkit.aspx

17   Hadfield, E., Sleath, E., Brown, S. and Holdsworth, E. (2020) A systematic review into the effectiveness of Integrated Offender Management, *Criminology & Criminal Justice.* DOI:10.1177/1748895820912295

18   https://blogs.lse.ac.uk/politicsandpolicy/lockdown-social-norms/

19   Moran, D. (2019). How the prison environment can support recovery. *Prison Service Journal, 242,* 44-49.

20   Moran, D. (2019). 'Back to nature? Attention restoration theory and the restorative effects of nature contact in prison. *Health & Place, 57,* 35-43.

21   Auty, K.M., & Liebling, A. (2020). Exploring the relationship between prison social climate and reoffending. *Justice Quarterly, 37,* 358-381.

22   Kincaid, S., Roberts, M. and Kane, E. (2019) *Children of Prisoners: Fixing a broken system.* London: Crest and Centre for Health and Justice, University of Nottingham.
       https://static.wixstatic.com/ugd/89643c_a905d6cf4f644ee5afb346e368bb9e0e.pdf

23   Scope for trauma-informed prisons practice (e.g. Scottish Prison Service)
       https://www.strath.ac.uk/humanities/news/exploringtrauma-informedpractice/

24   https://www.gov.uk/government/publications/forensic-science-and-beyond

25   https://royalsociety.org/about-us/programmes/science-and-law/

26   https://www.parliament.uk/forensic-science-lords-inquiry

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Annex 1: List of participants and contributors

Chairs: Professor Paul Taylor, Lancaster University
Rachel Tuffin, College of Policing
Facilitator: Rachael Creed, GOS

Working Group members:

Dr John Baird, EPSRC

Professor Siddhartha Bandyopadhyay, University of Birmingham

Professor Graham Farrell, University of Leeds

Dr David Buil Gil, University of Manchester

Professor Robin Grimes, CSA MoD Nuclear

Professor Susan McVie, University of Edinburgh

Dr Andrew Stafford, ESRC

Additional experts consulted:

Professor Dame Sue Black, Lancaster University
Rob Braddock, College of Policing
Professor Tom Buchanan, University of Westminster
Professor Mark Button, University of Portsmouth
Professor Pete Burnap, Cardiff University
Sarah Colover, College of Policing
Professor Ross Coomber, University of Liverpool
Mr William Dance, Lancaster University
Dr Emily Evans, University of Birmingham
Dr Kathryn Hodges, Centre for the Study of Modern Slavery at St Mary's
Professor Martin Innes, Cardiff University Crime and Security Research Institute
Prof Shane D Johnson, Dawes Centre for Future Crime at UCL
Professor Adam Joinson, University of Bath
Professor Eddie Kane, University of Birmingham
Dr Francesca Lace, ESRC
Dr Ben Lee, Lancaster University
Carolyn Lowell, NPCC Forensic Capability Network
Professor Michael Levi, Cardiff University
Dr Sarah Marsden, University of St. Andrews
Heather Marquette, University of Birmingham
Dr Gareth Mott, University of Kent
Ms Mariam Nouh, University of Oxford
Dr Jason R. C. Nurse, University of Kent
Dr Laura G. E. Smith, University of Bath
Gemma Stannard, Norfolk Police
Dr Adrian West, National Crime Agency
Fatima Zahrah, University of Oxford

Note, because of time constraints, many but not all contributors had the opportunity to review and approve the final recommendations.

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Annex 2: List of ARIs considered by this group

1. Drug use and availability.
2. Monitoring of threats and hazards to improve crime prevention, detection and response.
3. Using big data to assess criminal behaviour and trafficking.
4. Enabling sharing of data, evaluation and monitoring to enable better joint working.
5. Detection and prevention.
6. Monitoring and analysing threats and hazards at incident scenes in real time, including the use of multiple and non- traditional sources such as crowd sourcing and social media.
7. How do we detect and mitigate threats, crime and smuggling?
8. Increased exposure to cyber harms and use of online platforms to facilitate extremism.
9. How will disinformation techniques evolve to profit from the crisis? How do different societies or groups imbibe, use or combat rumour and misinformation?
10. Changes in the opportunity structure for crime and in the drivers of the tendency to criminal behaviour, whether social, innate, or environmental.
11. Relationship between extremism and integration, dynamics of friendship/familial and community relationships, and links between hate crime, other crimes, and extremism.
12. Supporting integration of services around rehabilitation and prevention of re-offending.
13. Understanding the contribution of forensic techniques to the Criminal Justice System, within investigations and in court, including issues such as attrition of cases in the system.
14. Decent and safe prisons: prisons are decent, safe and productive places to live and work.
15. Understanding which individuals are at risk of becoming offenders (and/or victims), for what reason and at what stages of their lives.
16. Public protection: the public are protected from harm caused by offenders.
17. Lessons learned from investigations.
18. Reducing reoffending: the rate of reoffending is reduced and the life changes for offenders are improved.
19. How is the landscape of crime changing?
20. Improved knowledge of the harms and impacts of serious organised crime, including economic impact.
21. Understanding how serious organized crime markets work, and how they interact with each other.
22. Analysis of how conflict and terrorist dynamics may change as a direct or indirect result of COVID-19.

23. Analysis of what new conflicts may arise and where there might be new opportunities to resolve conflict.
24. Analysis of how COVID-19 interacts with other factors of instability in different countries.

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Annex 3: Evidence and resources relevant to ARIs

This Annex is divided into two tables. The first summarises resources identified by the Working Group, noting that some resources cross-over ARIs but are only represented in one section. These were the main resource used for the creation of the summary. The second is an additional resource which summarises relevant work collated by the College of Policing from its What Works Toolkit which contains systematic review findings on crime reduction and its Research Map which is a resource for sharing policing and crime research studies.

Table 1. Working Group responses

ARI	Resource	Key Messages
1. Drug use and availability	Windle, J., Moyle, L. and Coomber, R. (2020) 'Vulnerable Kids Going Country: Children and Young People's Involvement in County Lines Drug Dealing', *Youth Justice,* 20(1-2): 64-78. https://doi.org/10.1177/1473225420902840 Coomber, R. and Moyle, L. (2017) 'The changing shape of street-level heroin and crack supply in England: Commuting, holidaying and cuckooing drug dealers across 'County Lines', *British Journal of Criminology,* 58(6): 1321-1342. https://doi.org/10.1093/bjc/azx068 Coomber, R. and Moyle, L. (2014) 'Beyond drug dealing: developing and extending the concept of 'social supply' of illicit drugs to 'minimally commercial supply'. *Drugs Education, Policy and Prevention,* 21(2): 157164. http://dx.doi.org/10.3109/09687637.2013.798265	Two main areas of sometimes overlapping concern are non-'proper' dealer involvement and the issue of vulnerability and organised crime/supply, and that too many individuals that are not dealers proper or involved with organised crime (even though they might 'run'/'sell' for them) get treated by the CJS as though they were. A consequence of this is inappropriate CJS processing and/or harsh sentencing. Social Suppliers (those that supply to friends and acquaintances for little or no profit) are not involved with organised crime but low thresholds can see them incorrectly classified as 'dealers' and prosecuted as such and Minimally Commercial Suppliers (such as heroin user-dealers or runners) who mostly earn very little and mainly do so for their own supply purposes may well be 'connected' to organised crime but in reality sit outside the general machinations of the organised crime group. Other vulnerable groups such as drug addicted

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		women/men that are exploited by organised crime groups and young children are of course of major concern.
2. Monitoring of threats and hazards to improve crime prevention, detection and response	(See also 19) In addition to government's own resources (Home Office (2019). Future Technology Trends in Security. Home Office: London. https://www.gov.uk/government/publications/futuretechnology-trends-in-security; MoD (2015). Strategic Trends Programme: Future Operating Environment 2035, https://www.gov.uk/government/publications/future_-operating-environment-2035) the Dawes Centre for Future Crime at UCL, research conducted and underway covers a variety of relevant topics: https://www.ucl.ac.uk/jill-dando-institute/research/dawescentre-future-crime Johnson, S.D., Ekblom, P., Laycock, G., Frith, M.J., Sombatruang, N., Valdez, E.R. (2018). Future Crime. In the Routledge *Handbook of Crime Science*. https://www.routledgehandbooks.com/doi/10.4324/97802 03431405-32	Futurists consider a number of classic dimensions — encapsulated by the acronym PESTLE (Political, Economic, Social, Technological, Law, Environment) - when considering how change will affect a business or other organisation. [Government should] routinely engage in systems thinking. Changes in any PESTLE dimension can impact upon crime, so changes implemented by any department have the potential to impact upon crime. Such unanticipated consequences should become anticipated consequences, the effects of which are purposefully designed out. In many cases, crime opportunities emerge from the launch of new products and services. While products undergo health and safety risk assessments, little to no consideration is given to their crime and security implications. Government should consider what might be done to encourage businesses to do so, either through regulation, self-regulation or other incentive models, such as labelling schemes.
3. Using big data to assess criminal behaviour and trafficking	Williams, M.L., Burnap, P. & Sloan, L. (2017). Crime Sensing with Big Data: The Affordances and Limitations of Using Open-source Communications to Estimate Crime Patterns. *The British Journal of Criminology*, Volume 57, Issue 2: 320–340, 1 March 2017.	Examines the strengths and limitations of using big data to establish associations between aggregated opensource communications data and aggregated police data to estimate crime patterns

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	Babuta, A. (2017). *Big Data and Policing: An Assessment of Law Enforcement Requirements, Expectations and Priorities*. The Royal United Services Institute Occasional Paper, September 2017.	Comprehensive overview of the current use of big data for crime prevention, including its current use within police forces, the future of big data and policing, and challenges.
	Kennedy, L., Caplan, J. & Piza, E. (2018). *Risk-Based Policing: Evidence-Based Crime Prevention with Big Data and Spatial Analytics*. Oakland: University of California Press.	Discusses the use of big data for evidence-based strategies for crime risk reduction, and present case studies of risk-based policing assisted by big data technologies in the US.
4. Enabling sharing of data, evaluation and monitoring to enable better joint working	Assessed to be a more structural or technical question, rather than a social science question	
5. Detection and prevention	Food Fraud Prevention: Policy, Strategy, and Decision-Making – Implementation Steps for a Government Agency or Industry, J. Spink et al (2016) CHIMIA, 70 no5. http://docserver.ingentaconnect.com/deliver/connect/scs/00094293/v70n5/s2.pdf?expires=1600338513&id=0000&titleid=10984&checksum=45899105B7D5911DF949370F541047BD	Focus should be on prevention of food fraud opportunities as detection is very difficult. Explicitly state food fraud as a crime, multi-agency approach needed to detect and prevent.
	https://www.sciencedirect.com/science/article/abs/pii/S0924224417302066	Apply routine activity theory to food fraud research into opportunities, motivations and control measures need to be defined. Key aspect is determining what food fraud vulnerabilities are in order to prevent them from being exploited. Global issue due to supply chains, economic drivers and cultural/behavioural factors contribute to

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		motivations heightened by events such as a pandemic.
	http://clok.uclan.ac.uk/26402/1/26402%20Manuscript_Food%2520fraud%2520vulnerability%2520assessment_Accepted%2520version.pdf	'Estimated that fraud costs the UK food economy £11 billion a year but this is only the tip of the iceberg as fraud is massively underreported. By preventing fraud in food supply chain, it is possible to reduce these estimated costs. In fact, by tackling fraud, this could boost the UK food industry's profit by £4.5 billion (Fraud Review Team, 2006; White 2017). However, to date, there is very little information regarding the number of reported frauds committed in the food industry or number of food industry / supply chain victimised by fraud. As fraud is not a policing priority this has resulted in substantial numbers of un-investigated cases (Doig, 2018). A culture within the food industry that questions the source of its supply chain and wider food integrity should be encouraged.'
6. Monitoring and analysing threats and hazards at incident scenes in real time, including the use of multiple and non- traditional sources such as crowd sourcing and social media	The Open Source Communications, Analytics Research (OSCAR) Development Centre Brief Papers and Reports, http://upsi.org.uk/oscar/	Methodology for providing near-real time open source insights across a range of issues including impacts of and reactions to terror events; (dis)information operations; public order; public perceptions.

	Innes, M., Innes, H., Dobreva, D., Chermak, S., Huey, L. & McGovern, A. (2018). *From Minutes to Months: A rapid evidence assessment of the impact of media and social media during and after terror events*. A Report to the Five Country Ministerial Countering Violent Extremism Working Group, July 2018.	Report written for the 'Five Eyes' governments and illustrates the kinds of empirical data and conceptual modelling that can be distilled from social media analytics.
	Innes, M. (2020). *Soft Facts and Digital Behavioural Influencing after the 2017 Terror Attacks, Full Report*. Centre for Research and Evidence on Security Threats, February 2020.	Showcases application of the method to hostile state disinformation.
7. How do we detect and mitigate threats, crime and smuggling?	We did not identify a source in this area – the area is broad, and aspects are addressed under questions 2, 19 and 20.	
8. Increased exposure to cyber harms and use of online platforms to facilitate extremism	Macklin, G. (2019). The Evolution of Extreme-Right Terrorism and Efforts to Counter it in the United Kingdom. *CTC Sentinel* 12 (1):15-20.	
	Holt, T., Freilich, J. & Chermak, M. (2017). Internet Based Radicalization as Enculturation to Violent Deviant Subcultures. *Deviant Behavior* 38 (8): 855-869.	
	Lee, B. & Knott, K. (2020). More Grist to the Mill? Reciprocal Radicalisation and Reactions to Terrorism in the Far-Right Digital Milieu. *Perspectives on Terrorism* 14(3): 98-115.	
	Carnegie Partnership for Countering Disinformation: Resources and Research Questions, https://carnegieendowment.org/specialprojects/counterin ginfluenceoperations/io ESRC Research Centre on Protecting Citizens Online (commences 1 October 2020).	

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	Fisher, A., Prucha, N. & Winterbotham, E. (2019). *Global Research Network on Terrorism and Technology: Paper No. 6 Mapping the Jihadist Information Ecosystem Towards the Next Generation of Disruption Capability.* London: The Royal United Services Institute.	
	Smith, L.G.E., Blackwood, L. & Thomas, E. F. (2020). The Need to Refocus on the Group as the Site of Radicalization. *Perspectives on Psychological Science, 15* (2): 327-352.	
	Smith, L.G.E., Wakeford, L., Cribbin, T.F., Barnett, J. & Hou, W.K. (2020). Detecting psychological change through mobilizing interactions and changes in extremist linguistic style. *Computers in Human Behavior,* 108,106298.	
	Violent Online Political Extremism (Vox-Pol) network, https://www.voxpol.eu/	Academic research network focused on researching the prevalence, contours, functions, and impacts of Violent Online Political Extremism and responses to it.
	Global Internet Forum to Counter Terrorism, https://www.gifct.org/about/	Group of companies, dedicated to disrupting terrorist abuse of online digital platforms.
	Tech Against Terrorism: https://www.techagainstterrorism.org/	Working on behalf of the United Nations Counter-Terrorism Committee Executive Directorate to support the global tech industry to tackle terrorist exploitation of their technologies.

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	Vox-Pol and Council for Registered Ethical Security Testers (CREST) projects.	One the most comprehensive project on online violent extremism is the Vox-Pol and CREST project. This project produces publications and researchers from various institutions and in multiple languages on a very regular basis. Their research also encompasses findings derived from a variety of different disciplines including social sciences, law and computer sciences.
	Cyber Threats Research Centre, https://www.swansea.ac.uk/law/cytrec/projects/	Work on cyber terrorism and radicals.
	The Royal United Services Institute, https://rusi.org/publication/other-publications/international-cyber-terrorism-regulationproject	Work on cyber terrorism and radicals.
	Papasavva, A., Zannettou, S., De Cristofaro, E., Stringhini, G. & Blackburn J. (2020). Raiders of the lost kek: 3.5 years of augmented 4chan posts from the politically incorrect board. *Proceedings of the International AAAI Conference on Web and Social Media*, 14(1): 885–894, May 2020.	For researchers, having large-scale datasets is an integral asset for any social media research. However, collecting these datasets is often a very time-consuming task which can take years on end, which they cannot afford to spend. Recently, it is becoming more common for researchers to collect large-scale datasets and publish them so that they are available to the wider research community and can open doors for collaboration between researchers. These dataset papers are extremely useful resources for researchers, these are examples.
	Zannettou, S., Bradlyn, B., De Cristofaro, E., Sirivianos, M., Stringhini, G., Kwak, H. & Blackburn, J. (2018). What is gab: A bastion of free speech or an alt-right echo chamber. *Companion Proceedings of the Web*, Conference 2018.	
	Baumgartner, J., Zannettou, S., Keegan, B., Squire, M. & Blackburn, J. (2020). The pushshift reddit dataset. *Proceedings of the Inter-national AAAI Conference on Web and Social Media*, 14: 830–839, May 2020.	In addition to this, the International Conference on Web and Social Media (ICWSM) has a dataset track which publishes several of these dataset papers (https://www.icwsm.org/2020/index.html#papers_accept ed). Dataset papers can also be found at more

	Baumgartner, J., Zannettou, S., Squire, M. & Blackburn, J. (2020). The pushshift telegram dataset. *Proceedings of the International AAAI Conference on Web and Social Media*, 14(1): 840–847, May 2020.	technical venues such as The WWW Conference, and International Conference on Data Mining which focuses on Data Mining.
	Pushshift, https://pushshift.io/	Pushshift is a social media data collection, analysis, and archiving platform that has collected data from several platforms including Reddit and Telegram and made it available to researchers. In addition to monthly dumps, Pushshift provides computational tools to aid in searching, aggregating, and performing exploratory analysis on the entirety of the dataset. This tool makes it possible for social media researchers to reduce time spent in the data collection, cleaning, and storage phases of their projects.
	Mott, G. (2019). A storm on the horizon? 'Twister' and the implications of the blockchain and peer to peer social networks for online violent extremism. *Studies in Conflict & Terrorism*, 42 (1-2).	One of the key ways that stakeholders remove extremist content from online platforms is to censor it from centrally owned servers. The need to censor has gained increasing prominence in recent years, including from governments, traditional media platforms (for instance newspapers) and online platforms themselves. In particular, Twitter has become notably more effective at censorship of extremist material on its own platform. Key reference Mott, G. (2019). This, however, is a one trick pony. It relies upon the extremist material being posted by a

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		centralised server that is not owned or run by the extremists themselves. Whilst centralised platforms remain ascendant in terms of their widespread use, it must be acknowledged that extremists now have relatively easy means by which to host their own servers (via federated networks) or indeed operate on an entirely peer-to-peer platform (facilitated by blockchain and BitTorrent protocols, on which censorship would be very difficult indeed. In effect, the marked success of the censorship model is likely to be short lived as extremists increasingly migrate to platforms that operate either federated or peer-to-peer models.
9. How will disinformation techniques evolve to profit from the crisis? How do different societies or groups imbibe, use or combat rumour and misinformation?	Pennycook, G., McPhetres, J., Zhang, Y., Lu, J. G., & Rand, D. G. (2020). Fighting COVID-19 misinformation on social media: Experimental evidence for a scalable accuracy nudge intervention. *Psychological Science.*	In terms of academic research, the current work of Gordon Pennycook, David Rand and others is cutting edge and likely to be useful.
	Pennycook, G., Epstein, Z., Mosleh, M., Arechar, A. A., Eckles, D., & Rand, D. G. (2019). Understanding and reducing the spread of misinformation online. (*under review*) http://dx.doi.org/10.31234/osf.io/3n9u8	
	First Draft, https://firstdraftnews.org/about/	First Draft are doing excellent work. Their three part series on the psychology of misinformation https://firstdraftnews.org/latest/the-psychology-ofmisinformation-why-were-vulnerable/ is of value
	The Computational Propaganda Project, https://comprop.oii.ox.ac.uk	Most authoritative source (Howard, *et al*).

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	Global Disinformation Index, *Adversarial Narratives: A New Model for Disinformation*, https://disinformationindex.org/wp-content/uploads/2019/08/GDI_Adverserial-Narratives_Report_V6.pdf	High-quality, topical research. This paper looks at modern, hybrid disinformation and uses a case study of "Stop 5G". Page 12, which gives an overview of hybrid threat actors, is particularly useful. For an overview of how disinformation is profitable, I'd recommend the Global Development Institute's *The Quarter Billion Dollar Question: How is Disinformation Gaming Ad Tech?* paper (link). The Global Development Institute also have a paper specifically looking at profitable COVID-19 disinformation (link).
	European External Action Service, *Special Report Update: Short Assessment Of Narratives And Disinformation Around The COVID-19 Pandemic*, https://eeas.europa.eu/delegations/un-geneva_en/77996/EEAS%20SPECIAL%20REPORT%20UPDATE:%20Short%20Assessment%20of%20Narratives%20and%20Disinformation%20around%20the%20COVID-19/Coronavirus%20Pandemic%20(Updated%202%20–%2022%20April)	Flagship project of the European External Action Service's East StratCom Task Force, EUvsDISINFO carries out assessments of disinformation across Europe and beyond. This special report published in May 2020 looks at the interplay between statesponsored disinformation, terrorist groups, and the responses of Western nations.
	European Commission, *Tackling COVID-19 disinformation - Getting the facts right*, https://ec.europa.eu/info/sites/info/files/communicationtackling-covid-19-disinformation-getting-factsright_en.pdf	This document gives an overview of the key challenges of the COVID-19 "infodemic" and details the necessary next steps to address them. It lays out the need for a better cooperation and a coordinated EU-wide response.
10. Changes in the opportunity structure for crime and in the	Arizona State University: Centre for Problem Oriented Policing, Guides and Toolkits, https://popcenter.asu.edu/	Guides and toolkits addressing crime-specific problems. They target a police readership most directly but policymakers, researchers and other agencies with crimerelated responsibilities.

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drivers of the tendency to criminal behaviour, whether social, innate or environmental	Farrell, G., Tilley, N. & Tseloni, A. (2014). Why the Crime Drop? *Crime and Justice*, 43 (1): 421-490.	Review essay summarising the science explaining the dramatic prolonged declines in many types of crime across western countries.
	Clarke, R.V. (2018). *The Theory and Practice of Situational Crime Prevention*, Oxford Research Encyclopaedia of Criminology.	Review essay of situational crime prevention (the term for crime-opportunity-reducing measures).
11. Relationship between extremism and integration, dynamics of friendship/ familial and community relationships, and links between hate crime, other crimes and extremism	Clemmow, C., Schumann, S., Salman, N. L. & Gill, P. (2020). The base rate study: developing base rates for risk factors and indicators for engagement in violent extremism. *Journal of forensic sciences*, *65*(3): 865-881	On risk and protective factors including the role of family, local networks, community support for extremism.
	Emmelkamp, J., Asscher, J. J., Wissink, I. B. & Stams, G. J. (2020). Risk Factors for (Violent) Radicalization in Juveniles: A Multilevel Meta-Analysis. *Aggression and Violent Behavior*, doi: 10.1016/j.avb.2020.101489	
	Lösel, F., King, S., Bender, D. & Jugl, I. (2018). Protective factors against extremism and violent radicalization: A systematic review of research. *International journal of developmental science*, *12*(1-2), 89-102.	
	Vergani, M., Iqbal, M., Ilbahar, E. & Barton, G. (2018). The three Ps of radicalization: Push, pull and personal. A systematic scoping review of the scientific evidence about radicalization into violent extremism. *Studies in Conflict & Terrorism* 1-32.	
	Peucker, M., Grossman, M., Smith, D. & Dellal, H. D. (2016). Stocktake Research Project*: A systematic literature and selected program review on social cohesion, community resilience and violent extremism 2011-2015*. Victoria University.	

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12. Supporting integration of services around rehabilitation and prevention of reoffending	Dawson, P, and Stanko, B. (2013) 'Implementation, Implementation, Implementation: Insights from Offender Management Evaluations' Policing: A Journal of Policy and Practice, 7:3, 289–298, https://doi.org/10.1093/police/pat015 Prison education Davis, L. M., Bozick, R., Steele, J. L., Saunders, J. and Miles, J. N. V. (2013) 'Evaluating the Effectiveness of Correctional Education A Meta-Analysis of Programs That Provide Education to Incarcerated Adults', RAND corporation report, available at http://www.rand.org/pubs/research_reports/RR266.html Wilson, D. B., Gallagher, C. A. and MacKenzie, D. L. (2000) 'A meta-analysis of corrections-based education, vocation and work programs for adult offenders', Journal of Research in Crime and Delinquency, 37:4, 347-368	Joined up implementation of services essential for successful reduction of reoffending. Education and skills training programmes in correctional facilities aim to increase the education or skills levels of participants to improve their employment prospects on release. Meta-analysis showed overall, the evidence suggests that educational and skills training programmes in correctional facilities have reduced reoffending, but there is some evidence (from two studies) that they have increased reoffending.
	Prison visits M.M., Mitchell, K., Spooner, D., Jia, Y., Zhang. 2106. The effect of prison visitation on re-entry success: A meta-analysis. Journal of Criminal Justice, 47, pp. 74– 83.	Prison visits provide prisoners with an opportunity to preserve or develop connections with family, friends, community and social support networks. By encouraging, maintaining or strengthening such networks, these visits may provide protective mechanisms that function to prevent criminal relapse after release from prison. Meta-analysis showed overall, the evidence suggests that prison visits have reduced crime, but there is some evidence that they have increased crime.

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13. Understanding the contribution of forensic techniques to the Criminal Justice System, within investigations and in court, including issues such as attrition of cases in the system	Annual Report of the Government Chief Scientific Adviser 2015. *Forensic Science and Beyond: Authenticity, Provenance and Assurance, Report*. London: The Government Office for Science.	The value of forensic science undertaken by Mark Walport when he was in office.
	Annual Report of the Government Chief Scientific Adviser. (2015). *Forensic Science and Beyond: Authenticity, Provenance and Assurance, Evidence and Case Studies*. London: The Government Office for Science.	
	The Judicial Primers Project. (2017). *Forensic DNA analysis: A Primer for Courts*. London: The Royal Society.	Two judicial primers in print with another 4 in the pipeline.
	The Judicial Primers Project. (2017). *Forensic gait analysis: A Primer for Courts*. London: The Royal Society.	
	Science and Technology Select Committee, 3rd Report of Session 2017–19. (2019). *Forensic science and the criminal justice system: a blueprint for change*. https://old.parliament.uk/forensic-science-lordsinquiry/	Advisory committee that is helping UKRI to find its 'funding place' for forensic science, it is in response to the House of Lords inquiry into forensic science.
	https://pubmed.ncbi.nlm.nih.gov/27125769/; https://authors.elsevier.com/a/1bbeQ_u7gL64vh; https://pubmed.ncbi.nlm.nih.gov/22950080/; https://pubmed.ncbi.nlm.nih.gov/26118853/; https://pubs.rsc.org/en/content/articlelanding/2015/an/c5an00112a#!divAbstract https://pubmed.ncbi.nlm.nih.gov/28387396/;	A proteomic approach for the rapid, multi-informative and reliable identification of blood

Matrix Assisted Laser Desorption Ionisation Mass Spectrometry (MALDI MS) can detect and image a variety of endogenous and exogenous compounds from latent finger marks.

Use of MALDI MS for criminal profiling and individualisation. |

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	Automated approaches that allows large dataset creation and datamining are being developed in many areas including the detection, analysis and interpretation of trace evidence – the EU funded Scientific High-throughput and Unified Toolkit for Trace analysis by forensic Laboratories in Europe (SHUTTLE) project - https://www.shuttle-pcp.eu/project-at-a-glance/visionand-concept/ https://www.sciencedirect.com/science/article/pii/S26659 10720300712	The SHUTTLE project uses machine learning – deep learning approaches for evidence detection and analysis - this is an incredibly useful area for all aspects of forensic science and appears to be key in ARI's – supervised and unsupervised AI type studies and projects are starting to appear
	https://www.uknewsgroup.co.uk/a-ground-breaking-aifirm-helping-police-to-solve-serious-crimes-at-a-dramaticrate-with-unique-technology-is-celebrating-a-milestonewith-a-pioneering-revelation/	Using AI approaches for autodetection of people, cars etc is not new but significant developments have been made to improve detection in less than perfect situations including poor visibility
14. Decent and safe prisons: prisons are decent, safe and productive places to live and work	Moran, D. (2019) 'How the prison environment can support recovery'. *Prison Service Journal*, no. 242: 4449. Moran, D. (2019). 'Back to nature? Attention restoration theory and the restorative effects of nature contact in prison'. *Health & Place*, vol. 57: 35-43.	Improving the physical environment of prisons (regarding noise, light/dark and access to nature). Drawing on the work of Professor Dominique Moran: https://www.birmingham.ac.uk/staff/profiles/gees/moran-dominique.aspx Further articles on the topic are currently in press.
	Kincaid, S., Roberts, M. & Kane, E. (2019). *Children of Prisoners: Fixing a broken system.* London: CREST and Centre for Health and Justice, University of Nottingham. https://static.wixstatic.com/ugd/89643c_a905d6cf4f644ee5afb346e368bb9e0e.pdf	The effect of imprisonment on children.
	Auty, K.M. & Liebling, A. (2020). 'Exploring the relationship between prison social climate and reoffending' *Justice Quarterly* 37(2): 358-381.	Link between the quality of prison life and reoffending.

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15. Understanding which individuals are at risk of becoming offenders (and/or victims), for what reason and at what stages of their lives	Ministry for Justice. (2020). The Data First Project: *An Introductory User Guide. "Harnessing the potential of linked administrative data for the justice system*." (Version 2.0). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908466/datafirst-user-guide.pdf	Administrative data sources about offenders.
	Scottish Government, A National Statistics Publication for Scotland, Crime and Justice. (2019). *Reconviction Rates in Scotland: 2016-17, Offender Cohort.* https://www.gov.scot/publications/reconviction-ratesscotland-2016-17-offender-cohort/pages/4/	Administrative data sources about offenders.
	Scandinavian, and other European, register data. https://www.ssb.no/en/sok?sok=offender https://www.bra.se/bra-in-english/home/crime-andstatistics.html https://www.dst.dk/en/Statistik/emner/levevilkaar/kriminali tet	Administrative data sources about offenders. Provide exemplars in how data linkage to a wide range of databases can improve theory and policy.
	Jennings, W., Gray, E., Hay, C. & Farrall, S. (2015). Collating Longitudinal Data on Crime, Victimization and Social Attitudes in England and Wales: A New Resource for Exploring Long-term Trends in Crime. *The British Journal of Criminology*, Volume 55, Issue 5: 1005–1015.	Administrative data sources about victims. Crime Survey for England and Wales – new ways of using the data for longitudinal analysis.
	McVie, S., Norris, P. & Pillinger, R. (2019). Increasing Inequality in Experience of Victimization During the Crime Drop: Analysing Patterns of Victimization in Scotland from 1993 to 2014–15. *The British Journal of Criminology*, Volume 60, Issue 3: 782–802.	Administrative data sources about victims. Scottish Crime and Justice Survey – using advanced statistical methodologies to better understand increasing inequalities in crime and victimization.

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	The Peterborough Adolescent and Young Adult Developmental Study (PADS+). https://www.cac.crim.cam.ac.uk/research/padspres	Survey sources/other studies of offenders & victims.
	The Edinburgh Study of Youth Transitions and Crime. https://www.edinstudy.law.ed.ac.uk	Survey sources/other studies of offenders & victims.
	The 'Growing Up' Studies. https://growingupinscotland.org.uk https://www.growingup.ie https://www.growingup.co.nz https://growingupinaustralia.gov.au	Survey sources/other studies of offenders & victims.
16. Public protection: the public are protected from harm caused by offenders	Restorative justice Strang, H., Sherman, L.W., Mayo-Wilson, E., Woods, D. and Ariel, B. (2013) 'Restorative Justice Conferencing (RJC) Using Face-to-Face Meetings of Offenders and Victims: Effects on Offender Recidivism and Victim Satisfaction. A Systematic Review', Campbell Systematic Reviews, 2013:12 DOI: 10.4073/csr.2013.12 Livingstone, N., Macdonald, G. and Carr, N. (2013) 'Restorative justice conferencing for reducing recidivism in young offenders (aged 7 to 21)', Cochrane Database of Systematic Reviews, 2013, Issue 2. Art. No.: CD008898. DOI: 10.1002/14651858.CD008898.pub2	As a general overview - the very serious end is well dealt with and managed, because they are assessed as high-risk and receive regular probation visits, support etc. Various forces have brought in a risk assessment model focused on: Recency, Gravity and Frequency. There are gaps in our provision – given limited resources they are primarily targeted at the most serious offenders. Where the system is less able to cope is with slightly lower risk people who don't meet the criteria for the high-risk response. Restorative justice remains underused. Overall, the evidence suggests that RJC has reduced crime.
17. Lessons learned from investigations	Assessed to be a request for analysis of HSE investigations	

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18. Reducing reoffending: the rate of reoffending is reduced and the life chances for offenders are improved	Hadfield, E., Sleath, E., Brown, S. & Holdsworth, E. (2020). A systematic review into the effectiveness of Integrated Offender Management, *Criminology & Criminal Justice,* 16 March 2020*,* DOI:10.1177/1748895820912295	Integrated Offender Management
	Evaluation of the Wales Integrated Serious and Dangerous Offender Management (WISDOM) programme (2019) Kane *et al.* Can be provided upon request.	Integrated Offender Management
	Hester, M., Eisenstadt, N., Ortega-Avila, A., Morgan, K., Walker, S.J. & Bell, J. (2019). *Evaluation of the Drive Project – A Three-year Pilot to Address High-risk, High-harm Perpetrators of Domestic Abuse.* Bristol: Centre for Gender & Violence Research, University of Bristol.	Approaches to reducing violent reoffending
	Kane, E., Bandyopadhyay, S. & Cronin, E. (2019). *Preventing Violence against Vulnerable People Evaluation Report.* Nottingham: Centre for Health and Justice.	Approaches to reducing violent reoffending
	Kane, E., Durcan, G. & Zawojska, D. (2019). *Greater Manchester Health and Justice Strategic Review.* Nottingham: Centre for Health and Justice.	Approaches to reducing violent reoffending
	Kane, E., Evans, E., Mitsch, J. & Jilani, T. (2020). Are Liaison and Diversion Interventions in Policing Delivering the Planned Impact: a longitudinal evaluation in two Constabularies? *Criminal Behaviour and Mental Health.* DOI: 10.1002/cbm.2166.	Diversion from the CJS

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	Abramovaite, J., Bandyopadhyay, S., Stephenson, Z. & Woodhams, J. (2020). New *Chance: Process and Impact Evaluation*. Birmingham: University of Birmingham, Centre for Crime, Justice and Policing.	Diversion from the CJS
	Abramovaite, J. & Bandyopadhyay, S. (2019) *A quantitative evaluation of the effect of Community Resolution on reoffending among first time offenders*. Birmingham: Better Policing Collaborative.	Diversion from the CJS
	Weir, K., Routledge, G. & Kilili, S. (2019). Checkpoint: An Innovative Programme to Navigate People Away from the Cycle of Reoffending: Implementation Phase Evaluation. *Policing: A Journal of Policy and Practice.* https://doi.org/10.1093/police/paz015	Diversion from the CJS
19. How is the landscape of crime changing	The Dawes Centre for Future Crime at UCL, https://www.ucl.ac.uk/jill-dando-institute/research/dawes-centre-future-crime	Futurists consider a number of classic dimensions – encapsulated by the acronym PESTLE (Political, Economic, Social, Technological, Law, Environment) - when considering how change will affect a business or other organisation. [Government should] routinely engage in systems thinking. Changes in any PESTLE dimension can impact upon crime, so changes implemented by any department have the potential to impact upon crime. Such unanticipated consequences should become anticipated consequences, the effects of which are purposefully designed out.

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	Johnson, S.D., Ekblom, P., Laycock, G., Frith, M.J., Sombatruang, N. & Valdez, E.R. (2018). Future Crime. In the Routledge *Handbook of Crime Science* (Edited by Wortley, R., Sidebottom, A., Tilley, N. & Laycock, G.) Abingdon: Routledge. https://www.routledgehandbooks.com/doi/10.4324/9780203431405-32	In many cases, crime opportunities emerge from the launch of new products and services. While products undergo health and safety risk assessments, little to no consideration is given to their crime and security implications. Government should consider what might be done to encourage businesses to do so, either through regulation, self-regulation or other incentive models, such as labelling schemes.
	Home Office. (2019). *Future Technology Trends in Security*. Home Office: London. https://www.gov.uk/government/publications/futuretechnology-trends-in-security	
	MOD. (2015). *Strategic Trends Programme: Future Operating Environment 2035*. https://www.gov.uk/government/publications/futureoperating-environment-2035	
20. Improved knowledge of the harms and impacts of serious organised crime, including economic impact	Dorn, N. and van de Bunt, H. (2010) *Bad Thoughts: Towards an Organised Crime Harm Assessment and Prioritisation System*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1574071 Mackenzie, S., & Hamilton-Smith, N. (2011). Measuring police impact on organised crime. *Policing: An International Journal of Police Strategies & Management*.	By contrast with the metaphorical impact of McMafia – which seriously overstated the coherence of transnational organised crime - it might be fruitful to examine the cumulative harms from criminal actors and acts that may not be 'organised' in a hierarchical or even obviously networked way, which do constitute a threat but not necessarily one from 'threat actors' in a quasi-military sense. Much can be learned from understanding better how Mafias or – more saliently to the UK – smaller networks fail to migrate or grow locally.

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	Marquette, H. & Peiffer, C. (2018). Grappling with the 'real politics' of systemic corruption: Theoretical debates versus 'real-world' functions. *Governance*, 31(3): 499514.	Anti-corruption interventions often fail because they fail to take into account 'corruption functionality', or: *the ways in which corruption provides solutions to the everyday problems people face, particularly in resource-scarce environments, problems that often have deep social, structural, economic and political roots*. Developing multi-pronged interventions that tackle the underlying problems alongside strategies to detect and disrupt corrupt behaviours is necessary for effective, sustainable reductions in corruption. By identifying and investigating bribery 'positive outliers', or sectors where bribery reduced while in all other sectors it remained the same or increased, research shows that anti-corruption approaches that disrupt corruption patterns and networks can work up to a point. However, without also addressing the underlying causes (e.g., the functionality), interventions are unlikely to be sustained over time. In addition, depending on the nature of the underlying problems, even effective anti-corruption interventions can produce negative unintended consequences that have the potential to be more harmful than the bribery itself.
	Marquette, H. & Peiffer, C. (forthcoming). *Corruption Functionality Framework*. Birmingham: Institute for Global Innovation & Washington DC: Global Integrity.	
	Marquette, H. & Peiffer, C. (2018). 'Islands of integrity'? Reductions in bribery in Uganda and South Africa and lessons for anti-corruption policy and practice'. *DLP Research Paper 58*. Birmingham: Developmental Leadership Program.	
	Peiffer, C., Marquette, H., Armytage, R. & Budhram, T. (2019). The surprising case of police bribery in South Africa. *Crime, Law & Social Change*.72(5): 587-606.	
	Peiffer, C., Armytage, R., Marquette, H. & Gumisiriza, P. (forthcoming). Uganda's health sector as a complicated outlier in bribery reduction. *Development Policy Review*.	
21. Understanding how serious organized crime	Note – Four sets of responses. An overview including money laundering, and two focused specifically on fraud and human trafficking/modern slavery.	

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markets work, and how they interact with each other	Ariel, B., Englefield, A., & Denley, J. (2019). I HEARD IT THROUGH THE GRAPEVINE. *The Journal of Criminal Law and Criminology (1973-), 109*(4), 819-867. (for specific deterrence measures v prolific offenders, using randomised controlled trials)	Serious organised crime is a term of art, and might include most economic crimes, including many committed by otherwise legitimate actors, both money laundering 'enablers' and mainstream firms that harm air quality (like Volkswagen 'dieselgate') or do not manage their supply chain carefully, from modern slavery to toxic waste. Therefore, to attain better serious organised crime reduction, we may need to widen the lens, no longer looking just at *full-time* illicit actors. Stigmatising entire sectors as 'enablers' can be counter-productive, especially without good publishable evidence, but social media – e.g. Google (and to a lesser extent Facebook) advertising of fraud and money mule schemes without any due diligence -are clearly 'crime facilitators' and arguably this is laundering if they are paid from proceeds of fraud. So is Amazon marketplace's fake reviews and sales of counterfeit and harmful products.
	Crocker, R., Webb, S., Skidmore, M. *et al.* Tackling local organised crime groups: lessons from research in two UK cities. *Trends Organ Crim* **22,** 433–449 (2019). https://doi.org/10.1007/s12117-018-9335-x Dorn, N. and van de Bunt, H. (2010) *Bad Thoughts: Towards an Organised Crime Harm Assessment and Prioritisation System*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1574071 Levi, M., Doig, A., Gundur, R. Wall, D. and Williams, M. (2017) 'Cyberfraud and the Implications for Effective Risk-Based Responses: Themes from UK Research', *Crime, Law and Social Change*, 67 (1): 77-96. First online. DOI: 10.1007/s10611-016-9648-0. Mackenzie, S., & Hamilton-Smith, N. (2011). Measuring police impact on organised crime. *Policing: An International Journal of Police Strategies & Management.* Maxwell, N. (2020) *Five years of growth in public–private financial information-sharing partnerships to tackle crime* Levi, M. and Soudijn, M. (2020) 'Understanding the Laundering of Organized Crime Money'. In P. Reuter and	The intersection of different forms of criminal market is little understood and tends to be satisfied by anecdotal real cases without sufficient self-critical analysis of the limits to our knowledge, e.g. via concern about the methodologies of intelligence and its gaps. In other words, if all or many intersections were like x, what would we expect to see and is there a plausible way of testing these hypotheses. Thus cases where criminals do get together and engage in mutual action (see Hobbs (2013) Lush Life) fit a vision of easy criminal mobility and aggrandisement, without looking hard enough for counter-examples or understanding the constraints on offenders.

	M Tonry (eds) Organizing Crime: Mafias, Markets, and Networks, *Crime and Justice: an Annual Review of Research*. https://www.journals.uchicago.edu/doi/10.1086/708047	The harms of money laundering need to be understood more subtly.
	Campana, P. (2020). Human Smuggling: Structure and Mechanisms. *Crime and Justice*, *49*(1). https://doi.org/10.1086/708663	Interventions need to distinguish between organised crime with direct victims (like frauds, toxic waste and persons trafficked/exploited against their will) and those that are in sense consenting (like drugs taking and human smuggling); wildlife trafficking is a separate category. The National Economic Crime Centre has already been doing some serious thinking, but in the shift away from 'core nominal thinking' about organised crime, serious frauds and others should be thought about in a more connected
	Leukfeldt, E. R., Kleemans, E. R., Kruisbergen, E. W., & Roks, R. A. (2019). Criminal networks in a digitised world: on the nexus of borderless opportunities and local embeddedness. *Trends in Organized Crime*, *22*(3), 324345	
	Whittle, J., & Antonopoulos, G. A. (2020). How Eritreans plan, fund and manage irregular migration, and	

the extent of involvement of 'organised crime'. *Crime Prevention and Community Safety*, 1-18; Madarie, R., & Kruisbergen, E. W. (2020). Traffickers in Transit: Analysing the Logistics and Involvement Mechanisms of Organised Crime at Logistical Nodes in the Netherlands: Empirical Results of the Dutch Organised Crime Monitor. In *Understanding Recruitment to Organized Crime and Terrorism* (pp. 277-308). Springer, Cham.

Levi, M. 2020. 'Evaluating the Control of Money Laundering and Its Underlying Offences: the Search for Meaningful Data', Asian Journal of Criminology¸ 1-20, DOI: 10.1007/s11417-020-09319-y

way between regulators, police/nonpolice investigators and prosecutors, instead of their historic bifurcation as organised/not organised crime. In addition to enhancing the evidence base, partly through more experimental 'mystery shopping' tests to examine susceptibility to launder, to act corruptly, etc. I would commend the following:

Having selected out for prevention efforts only scams where suspects are likely to be unreachable in unfriendly countries (plus impact of Brexit), a more systematically varied approach (HMRC-style) to the Pursue model for different types of economic crime, based not just on harm but also the need to send messages to offenders. This should be accompanied by serious research into the impact of messaging on (separately) public reassurance, victims and offenders. It is fashionable to have national action days on fraud types and by Europol, but I have not seen any good analysis of their impacts beyond making everyone feel better (which may motivate them and therefore is good in itself).

Serious social network analysis for detecting and preventing fraud in government lending schemes. Government currently appear not to be stopping firms from obtaining loans (including business interruption loans) to bank accounts other than those registered to HMRC, and do not inform firms that this is happening. There are widespread opportunities for crime networks in this context, whether they are labelled as organised crime or not.

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| | | Systematic engagement of local & national safeguarding authorities and regulators in actions to make repeat victimisation of consumer/investment frauds harder.

Following up the Law Commission Proceeds of Crime Report published today, alongside a self-critical analysis of data sharing in anti-money laundering and its prospects for upscaling. The reforms of the subject access requests process envisaged in the Economic Crime Plan are good in themselves, but a realistic analysis of what is likely to be achieved when following up (or not) data sharing is long overdue, despite the Maxwell report's enthusiasm. |
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| | Button, M. and Cross, C. (2017) *Cyber Frauds, Scams and their Victims*. London: Routledge.

Levi, M.et al. 2016. The implications of economic cybercrime for policing. Project Report. [Online]. London: City of London Corporation. Available at: https://www.cityoflondon.gov.uk/business/economicresearch-and-information/research-publications/Documents/Research-2015/EconomicCybercrime-FullReport.pdf

Police Foundation/Perpetuity Research (2019). Improving the Police Response to Fraud. Available at http://www.police-foundation.org.uk/project/improvingthe-police-response-to-fraud-2/

Button, M., Lewis, C., Shepherd, D., Brooks, G., and Wakefield, A. (2012) *Fraud and Punishment: Enhancing Deterrence through More Effective Sanctions*. Portsmouth: Centre for Counter Fraud Studies. Available at https://researchportal.port.ac.uk/portal/en/publications/fra ud-and-punishment(75bb2919-4063-4a45-95bb687d2a34cfa3).html | The identification of tools which are effective in preventing fraud (and related crimes) should be identified and structures developed to promote such tools through standards, online resources, campaigns, training and education. This would require the use of experts as well as additional research. The Centre for Problem Orientated Policing provides an example for broader crime prevention.

The priority and resources dedicated to the investigation of fraud are often low and precarious. The government should encourage a higher priority and minimum levels of investment in investigation in the police and other relevant public bodies.

Underpinning the above two the government should consider investing in an Institute of Economic Crime. I think it should be broader than just fraud because other economic crimes such as cyber-crime, money laundering, corruption etc are often linked. This Institute should lead on the development of courses for leaders in the fight against economic crime to spread the knowledge and best practise. |

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	Human trafficking/Modern Slavery Carole Murphy, 2020, Surviving Trafficking, Seeking Asylum: Status, Waiting and the State, International Journal of Sociology and Social Policy https://www.emerald.com/insight/content/doi/10.1108/IJSSP-12-2019-0255/full/html Sasha Jesperson and Anne-Marie Barry, 2019, both working at the Centre for the Study of Modern Slavery at the time worked on a pivotal piece of research funded by the Modern Slavery Innovation Fund, that later contributed to a publication: Human Trafficking: An Organised Crime?, available as a hardcover on Amazon: https://www.amazon.co.uk/Human-Trafficking-Organised-Sasha-Jesperson/dp/1787381285 Carole Murphy, 2018, Game of Chance report, available at: https://www.stmarys.ac.uk/research/centres/modernslavery/docs/2018-jun-a-game-of-chance.pdf	While important steps have been taken to address modern slavery and human trafficking in the UK, the response is still fragmented and to some extent uncoordinated. As various agencies and institutions with competing demands, strive to address such complex phenomenon/crime, the need for vigorous oversight and guidance is key, as is the necessity for a more focussed interagency cooperation. Furthermore, to make significant progress in addressing the phenomenon, survivor voice is also of paramount importance. Survivors' experience and expertise can inform more effective policies and interventions.
22. Analysis of how conflict and terrorist dynamics may change as a direct or indirect result of COVID-19.	Oral contributions.	
23. Analysis of what new conflicts may arise and where there might be new opportunities to resolve conflict.	Existing resources not identified	

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| 24. Analysis of how COVID-19 interacts with other factors of instability in different countries | Herbert, S. & Marquette, H. (forthcoming). *COVID-19 conflict & governance: Emerging impacts and future evidence needs.* K4D Emerging Issues Paper. Brighton Institute for Development Studies.

Kleptocracy & 'egregious grand corruption' pose a significant threat, both to individual states/economies and to global stability. The dropping of anti-corruption standards as part of the urgent COVID-19 response is *directly* to blame for much of the exponential growth in corruption, fraud & serious organised crime that's being observed. | Already weak health systems are seeing increased corruption & this is likely to continue at the grand corruption level (as above) but also the petty corruption/frontline bribery level as demand for health services outstrips supplies; this could also see petty corruption (re)emerging in high income countries with under pressure health systems. |

This Annex is divided into two tables. The table above summarised resources identified by the Working Group, which were the main resource used for the creation of the summary.

The second table below provides an additional resource. It summarises relevant work collated by the College of Policing from its What Works Toolkit which contains systematic review findings on crime reduction and its Research Map which is a resource for sharing policing and crime research studies and therefore contains recent cutting edge research.

A third resource, a summary of all relevant research funded by the AHRC and ESRC, is available on request as an Excel spreadsheet and is commended to the reader, but not included below due to the alternative format.

Table 2. College of Policing collated resources

ARI	Resource	Key Messages
1. Drug use and availability	**Research map:** 1. Ongoing PhD "Simultaneous Profiling and Analysis of Street Heroin (SPASH)"; Miss Thulashija Sriskantharajah (Current map)	This research is based on simultaneous analysis and profiling of illicit drugs, mainly heroin samples, using currently rarely used instrumental techniques. The profiling of heroin provides valuable insights into (i) links between seizures, (ii) dealer networks and (iii) manufacture and trafficking routes. The significantly enhanced intelligence anticipated by applying this new methodology could serve to disrupt existing heroin supply and distribution networks, leading to crime prevention.

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2. Ongoing PhD "The policing and regulation of illegal drugs at music festivals in the UK"; Verity Smith (current map)	Through an extensive behind the scenes inquiry, this research will examine the ways that festival partner agencies work together to negotiate and implement policy, and how the festival setting mediates drug policy, policing priorities and discretion. Overall, this research will seek to fill this gap and to make an important contribution to the knowledge base of how drugs policing operates within bounded licensed leisure spaces.
3. Completed work/prof "Exploring Novel Psychoactive Substance (NPS) use and its consequences for police practitioners and substance users in the North East of England"; Prof Eileen Kaner (completed): https://n8prp.org.uk/wp-content/uploads/2018/06/N8-PRP-Small-Grants-NPS-study.pdf	NPS are a range of recently emerged psychoactive substances which are popular across most of the UK. An attempt has been made to control some NPS (e.g. mephedrone and synthetic cannabis/spice) through amendments to existing drug laws. However, the synthetic production of NPS means that changing one compound in the chemical composition has been sufficient to bypass existing laws. Police staff report a rapidly increasing workload due to NPS use but also a lack of confidence about precisely what substance has been used and its likely effects. Thus, there is a need for sensitive exploratory work to understand the impact of NPS use on the police system from the perspective of staff and users.

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	Toolkit	
	Drug Courts	Overall, the evidence suggests that drug courts have reduced crime, but there is some evidence that they have increased crime. Adult drug courts showed a 10% reduction in reoffending, while juvenile drug courts showed a 5% reduction. Drug courts work through a combination of supervision, coercion by the judge and a system of rewards and punishments for infractions and good behaviour. Drug courts which focus on non-violent and first-time offenders show the highest reduction in reoffending. It is important to match the needs of the participants to the services they are offered, and these services should be intensive and behavioural in nature. Drug courts reduced rates of offending amongst all drug addicts, and while they were found to work best in methamphetamine addicts, there was no statistically significant evidence that they work for heroin addicts.
	Shaffer, D. K. (2006) 'Reconsidering Drug Court Effectiveness: A Meta-Analytic View', Doctoral Thesis, University of Cincinnati	
	Government Accountability Office (2011) Adult Drug Courts: Studies Show Courts Reduce Recidivism, but DoJ Could Enhance Future Performance Measure Revision Efforts, available at www.gao.gov/new.items/d1253.pdf	
	Stein, D. M., Homan, K. J. and DeBerard, S. (2015) 'The Effectiveness of Juvenile Treatment Drug Courts: A Meta-Analytic Review of Literature', Journal of Child and Adolescent Substance Abuse, 24:2, 80-93, DOI: 10.1080/1067828X.2013.764371	
	Mitchell, O., Wilson, D., Eggers, A. and MacKenzie, D. (2012) 'Drug courts' effects on criminal offending for juveniles and adults', Campbell Systematic Reviews, 2012:4 DOI: 10.4073/csr.2012.4	
	Brown. R. T. (2010) 'Systematic review of the impact of adult drug-treatment courts', Translational Research, June 2010, 263-274 doi:10.1016/j.trsl.2010.03.001	

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	Drug Substitution Programmes Egli, N., Pina, M., Skovbo Christensen, P., Aebi M. F. and Killias, M. (2009) 'Effects of drug substitution programs on offending among drug-addicts', Campbell Systematic Reviews, 2009:3 Perry, A. E., Neilson, M., Martyn-St James, M., Glanville, J. M., McCool, R., Duffy, S, Godfrey, C. and Hewitt, C. (2013) 'Pharmacological interventions for drug-using offenders', Cochrane Database of Systematic Reviews 2013, Issue 12 Amato L, Davoli M, Perucci CA, Ferri M, Faggiano F, Mattick RP. An overview of systematic reviews of effectiveness of opiate maintenance therapies: available evidence to information clinical practice and research. Journal of Substance Abuse Treatment 2005;28:321-9. Amato L, Davoli M, Minozzi S, Ferroni E, Ali R, Ferri M. Methadone at tapered doses for the management of opioid withdrawal. Cochrane Database of Systematic Reviews 2013, Issue 2. [DOI: 10.1002/14651858.CD003409.pub3] Gibson A, Degenhardt LJ. Mortality related to pharmacotherapies for opioid dependence: a comparative analysis of coronial records. Drug and Alcohol Review 2007;26:405-10.	Overall, the evidence suggests that drug substitution programmes can reduce crime, but the evidence is mixed and dependent on the drug substitute or treatment used. One review reported that heroin prescription was associated with greater reductions in offending compared to methadone prescription. Both reviews found no significant reduction in criminal behaviour when methadone or buprenorphine were used as a substitute compared to nonpharmacological interventions or other drugs, although there was a tendency for positive results. Both reviews found significant reductions in criminal behaviour when naltrexone was prescribed compared to counselling or behaviour therapy but this is based on a small number of studies and some evidence suggests that there is a greater likelihood of death in those treated with naltrexone and increased supervision is required in the community for its administration. Drug substitution programmes are assumed to reduce crime by lessening public order problems associated with drug users frequenting social spaces and reduce crimes undertaken to fund drug use.
		The dosage, the context (either secure or community-based), the method of administration and the amount of support provided to released prisoners were all suggested as potentially affecting the outcome of drug substitution programmes.

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	Other studies	Two-part review to look into the ways drugs are fuelling serious violence: who drug users are, what they are taking and how often to build the most in-depth and comprehensive picture of this issue to date.
	Ongoing review: Black, C (ongoing). *Independent Review of Drugs*	
	https://www.gov.uk/government/collections/independent-review-of-drugs-by-professor-damecarol-black	
	Phase 1 report published Feb 2020	
	https://www.gov.uk/government/publications/review-of-drugs-phase-one-report	
	Phase 2 started July 2020	
2. Monitoring of threats and hazards to improve crime prevention, detection and response	**Research Map** 1. Prof/work: "Threat, risk and harm: scoring of OCGs (Organised Crime Groups)"; Paul Mulholland; (current map – but possibly complete)	The National Crime Agency makes use of an Organised Crime Group Mapping (OCGM) process to capture information about active OCGs in the UK. A scoring mechanism is then used to translate the set of captured OCG features into a risk of harm assessment score. This project analyses both parts of the assessment process with the aim of recommending improvements to how OCGs are described and how those descriptions can be used most effectively in order to calculate risk.
	2. Ongoing PhD: "Written threat analysis"; Jim Shaw (current map)	This research explores the forensic analysis of written threats for individual style from a multi-dimensional point of view. The benefits of this could include an ability to detect sociolinguistic patterns - such as relative dating (particularly in relation to multiple threats), age profiling, location detection (in respect of areas of origin), social strata, gender, and authorship analysis (AUA) itself. The research could be of immense forensic potential for its use as a law enforcement tool, either as an intelligence asset, of evidential value, or both.

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3. Ongoing PhD: "Identifying and evaluating opportunities and obstacles for the use of new crime prevention and detection technologies in smart cities"; Julian Laufs (current map)	This research project attempts to identify opportunities for crime prevention in London's future smart city infrastructure and seeks to create risk assessment tool to assess general criteria that make crime prevention interventions more socially acceptable. Interventions will be discussed in terms of their usefulness (i.e. the potential for reducing police demand) as well as potential issues of social acceptability.
4. Ongoing PhD: "Examining the use of business analysis techniques to police organised criminal networks"; Chris Allen (current map)	Organised criminals mimic the operation of sophisticated businesses –the only difference being the product they sell is illegal. On this basis, the researcher will apply established economic analysis techniques to these groups in order to enhance the development of policing strategies and tactics surrounding their disruption.
5. Possibly complete work/prof: Understanding and improving risk assessment on domestic violence cases using machine learning tools". Juanjo Medina (current map)	This project contributes to the much-needed evidence base on domestic violence in an attempt to improve prevention of this social problem. The study is particularly focused on developing knowledge to improve the current risk assessment tools used by the police.
6. Possibly complete work/prof: "Evaluating the impact of police led and peer discussion-based knife crime prevention interventions on the attitudes, perceptions and knowledge of Key Stage 3 children"; Dr Charlotte Coleman (current map)	The researcher is working with South Yorkshire Police (SYP) to evaluate a pilot knife crime prevention intervention being delivered to Key Stage 3 children across South Yorks. This unfunded pilot research is novel, very timely and has provoked national interest from the National Knife Crime Working Party, members of parliament and the media. The research also aims to explore which of two interventions is more effective in generating shift in attitudes, perceptions and knowledge of knife crime, a) dissemination from SYP officers designed to disseminate hard hitting messages, or b) curriculum in class using a Home Office developed lesson plan.
7. Possibly complete PhD "Multiple missing: An exploration of behavioural consistency in repeat missing adults"; Claire Taylor (current map)	This study aims to advance our understanding of why individuals go missing repeatedly, their vulnerabilities and experiences whilst missing, and to provide critical insights for multi-agency prevention and future safeguarding strategies.

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	8. Ongoing work/prof: "Using the SAM/SARA v3 to assess and manage risk"; College of Policing (current map)	This is an evaluation of a pilot intervention project involving the use of two risk tools: the Spousal Assault Risk Assessment (SARA v3) and Stalking Assessment and Management (SAM). The pilot is being co-ordinated by the National Offender Management Service. A sample of police officers (offender managers - OMs) from three forces have been trained in the use of these tools and will apply the tools to a sample of highest risk suspects/offenders in their force area. The aim of using these tools is to improve the risk assessment/management of perpetrators of domestic violence and stalking, thereby reducing offending or reoffending of these individuals and helping to safeguard victims.
	9. Ongoing work/prof: "Evaluating the Northamptonshire Police community initiative to reduce violence (CIRV)"; College of Policing (current map)	This an evaluation of an intervention implemented by Northamptonshire Police. The Community Initiative to Reduce Violence focusses on reducing gang violence through the coordination of law enforcement, partner agencies and community members. The main aims of CIRV are to create a hostile environment for gangs and to provide tailored support as a viable alternative to gang membership.
	10. Ongoing work/prof "COVID-19 and child criminal exploitation: Closing urgent knowledge and data gaps on the implications of pandemic for county lines"; Ben Brewster (current map)	This research will assess changes and continuities in perpetrator behaviour resulting from social distancing, showing whether criminal business models are likely to change due to a changing risk and/or profitability profile. This project will inform efforts to urgently safeguard children from exploitation, as the impacts of COVID-19 unfold. This project will detail the impact of social distancing measures on offenders' ability to groom, methods for mobilising 'county lines' operations, and the prevention, detection and safeguarding abilities of police and other organisations. This research will provide substantial evidence upon which police, safeguarding and care organisations can formulate interventions that address county lines related offending, and reduce risk to vulnerable children and adults.

	11. Ongoing work/prof "Responding to the COVID-19 domestic abuse crisis: developing a rapid police evidence base"; Katrin Hohl (current tab)	The project provides a near real-time evidence base to inform the police approach to the apparent surge in domestic violence and abuse (DA) triggered by the COVID-19 lockdown in the UK. The mixed-methods study addresses urgent questions on the impact of COVID-19 on DA, which may have significant implications for the complex task of accurate police risk assessment, victim safeguarding, and criminal prosecution as the COVID-19 pandemic evolves.
	12. Ongoing PhD "The development and piloting of internet sex offender risk assessment within Cleveland Police"; Laura Foster-Hick (current map)	The aim of the study is to use research surrounding evidence-based policing and offender desistance policing to enable a risk assessment specifically for use with internet sex offenders (ISO) to be developed and piloted by Cleveland Police. The Active Risk Management System (ARMS), alongside the RM2000 is currently used within Cleveland Police to assess reoffending. However, there is as of yet no risk assessment tool developed specifically for internet sex offenders. This research therefore aims to adapt the ARMS, making it more suitable for the internet sex offender group.
	13. Ongoing work/prof: "Evaluating Surrey Police's High Harm Perpetrator Unit"; College of Policing (current map)	In one district under the jurisdiction of Surrey Police, the force has developed an intervention that combines and co-locates their existing Integrated Offender Management (IOM) and Violent and Sex Offender
		Register (ViSOR) functions. The new 'High Harm Perpetrator Unit' (HHPU) deals with serious sex offences, domestic abuse, hate crime, child abuse and serious violent crime and has also developed an algorithm that supports the identification of high harm perpetrators in these areas. The research project will evaluate the implementation of the HHPU, and the application of the algorithm to identify cohorts of high harm suspects who would not be traditionally identified through IOM/ViSOR.

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14. Ongoing work/prof: "Evaluating Operation Divan: An intervention targeting young people believed to be in possession of a knife or other weapon"; College of Policing (current map)	This is an evaluation of the intervention, originally developed and currently implemented by North Yorkshire Police, uses intelligence to identify young people under 18 who are suspected of carrying knives or other weapons. The aim of the intervention is to educate young people at the earliest opportunity to reduce weapon carrying, raise awareness of risks and consequences, and to provide support to safeguard young people and reduce their likelihood of offending.
15. Ongoing work/prof: "Identifying sexual trafficking online"; Dr Xavier L'Hoiry (current map)	The aim of this project is to create and test a scoring matrix for the effective identification of high-risk cases of sexual trafficking online, specifically those found on open source Internet sites such as escort websites and online classifieds.
16. Ongoing PhD: "Assessing the risk in domestic abuse: towards the development of an operationally useful domestic abuse risk assessment tool"; Paul Hargreaves (current map)	The key aim of this research is to empirically validate the policing response to domestic abuse and develop a framework that is operationally useful to those front-line officers dealing with domestic abuse.
17. Ongoing PhD: "How can the crime-terror nexus in prison be minimised?"; Hannah Bennet (current map)	The purpose of this study is to firstly, identify what the current Government and Prison Service is doing to tackle the new crime-terror nexus within prison and then evaluate how effective this approach is. Secondly, the study will provide recommendations that aim to minimize the nexus. It will enable a critical engagement of the four work strands within the UK's Counter-terrorism strategy (CONTEST): Prevent, Pursue, Protect, and Prepare, to identify whether this approach is the most effective at minimising the networking.
18. Possibly completed prof/work: "Evaluation of the implementation of domestic abuse perpetrator panels across West Mercia" (current map)	The Drive programme is a multi-agency model through which high-risk domestic violence perpetrators are identified and managed. Abusive and violent behaviours are disrupted through direct and indirect means, using appropriate civil, criminal and multi-agency partnership resources, and where possible individual behaviour-change work. High-risk perpetrators will be identified by the Multi-Agency Risk Assessment Conference process (MARACs) or by the police and will be referred to a new Domestic

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		Abuse Perpetrator Panel (DAPP) which will then determine whether the perpetrator is referred into the Drive model or not.
	19. Completed prof/work: "A systematic review of the effectiveness of the electronic monitoring of offenders"; Dr Jyoti Belur (completed): https://whatworks.college.police.uk/Research/Systematic_Review_Series/Documents/Electronic_monitoring_SR.pdf	A systematic review to appraise existing evidence on the efficacy of electronic monitoring (EM) of offenders as a crime reduction initiative.
	20. Completed prof/work: "Better Policing Collaborative, Data Monitoring (Norfolk and Suffolk)"; (completed)	This research will collate robust and high-quality crime and policing data from across Norfolk and Suffolk with the aim of establishing an on-going process so this data is regularly updated to inform policy making
	21. Completed PhD: "Intelligence and Counterterrorism"; University of York (completed)	This is a European Union-funded framework programme 7 collaborative project research project. The Police Service of Northern Ireland will provide end user input into the project. The primary objective is to develop advanced and innovative algorithms for human decision support in combating terrorism and other criminal activities, such as human trafficking, child pornography, detection of dangerous situations (e.g. robberies) and the use of dangerous objects (e.g. knives or guns) in public spaces. Efficient tools for dealing with such situations are crucial to ensuring the safety of citizens.
	22. Completed work/prof: "Scalable Measures for Automated Recognition Technologies (SMART)"; Dr Marija Krlic (completed) https://cordis.europa.eu/project/id/261727	Automated recognition of individuals and/or pre-determined traits or risk factors/criteria lies at the basis of smart surveillance systems. Yet new European Union regulations explicitly prohibit automated decision-taking regarding individuals unless "authorised by a law which also lays down measures to safeguard the data subject's legitimate interests" (Art 7, CFD 2008/977/JHA). Which laws are applicable in this context? What measures are envisioned? What else should the law contain?

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	23. Completed work/prof: "Evaluation of Hull Adult Female Triage Scheme"; Iain Brennan (completed) http://library.college.police.uk/docs/Police-Female-Triage-Report-Hull-University-2015.pdf	This is an evaluation of a pilot scheme developed within Kingston-upon-Hull. The aims of the pilot scheme known as 'Adult Female Triage' are to reduce the potential for reoffending through early identification of risk; divert female offenders away from the criminal justice system by providing alternative, proportionate, effective and targeted alternatives; increase community confidence in the criminal justice system through greater involvement of victims and witnesses and use of restorative justice; to empower and support female adult offenders to take responsibility for the management of their risk of offending.
	24. Completed work/prof: "Better Policing Collaborative, PKF award - Specialist training regarding security threats": University of Liverpool (completed)	This project is a research and training programme based on Observing Rapport-Based Interpersonal Techniques (ORBIT), a rapport-based framework for interviewing high value detainees regarding security threats. There are three parts to the project: A rolling programme of evidence based training to be developed; The provision of an evidence based framework through which officers can better understand effective interview practices; Evaluation of the efficacy of training provision through pre- and post-intervention measures.
	25. Completed PhD: "Examining the predictive factors of violent extremist attitudes among communities with varying levels of cohesiveness"; Saskia Ryan (completed) http://eprints.hud.ac.uk/id/eprint/34832/1/Ryan%20THESIS.pdf	The evidence base for which factors predict extremism is generally weak. This study seeks to investigate the role of the social environment around an individual as they themselves understand it alongside their beliefs and attitudes. Two of the main strategies currently adopted involve increasing resilience and building cohesive communities. The main aim of the project is to understand the predictive ability of resilience, in comparison to other predictive factors, of attitudes towards violent extremism among communities with varying levels of cohesiveness.

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	26. Completed work/prof: "Police use of community intelligence"; Dr Colin Roberts (completed)	Through the creation of an innovative technological tool– the Semantic Reasoning Engine, the project will develop and implement a European narrative between the partners, which will increase the effectiveness of pin-pointing radicalisation. This contributes to the expected result of increased effectiveness. The project contributes to the discourse on enhancing knowledge and increasing response capacity, by developing innovative methodologies to collect data on key issues driving inter & intra community separation and potential dissatisfaction.
	Toolkit **Alley-gating** Sidebottom, A., Tompson, L., Thornton, A., Bullock, K., Tilley, N., Bowers, K. and Johnson, S. D. (2015) Gating Alleys to Reduce Crime: A Meta-Analysis and Realist Synthesis	Alley gates are lockable gates installed to prevent access by offenders to alleyways, such as those which run along the rear of older-style terraced housing in the UK. Overall, the evidence suggests that alley gating has reduced crime. Based on meta-analysis.
	Environmental design to prevent retail robbery Casteel, Carri and Peek-Asa, Corrine (2000) 'Effectiveness of Crime Prevention Through Environmental Design (CPTED) in Reducing Robberies', American Journal of Preventive Medicine, 18:4S, 99-115	Crime Prevention through Environmental Design (CPTED) refers to measures taken to reduce crime through the manipulation of the physical environment. CPTED outlines a set of principles designed to influence potential offenders' perceptions of the risk, effort and rewards of offending. Overall, evidence suggests that CPTED has no impact on crime (but some studies suggest a decrease in commercial robberies in retail settings). This finding requires careful consideration given the age of the reviewed studies and the low quality of supporting evidence. The majority of studies reviewed experienced a percentage reduction in robberies, though two studies showed an increase in commercial robbery.

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	CCTV Welsh, Brandon C. and Farrington, David P. (2009) 'Public Area CCTV and Crime Prevention: An Updated Systematic Review and Meta-Analysis', Justice Quarterly, 26: 4, 716 — 745 Farrington David P, Gill Martin, Waples, Sam J and Argomaniz, Javier (2007) The effects of closed-circuit television on crime: Meta-analysis of an English national quasi multi-site evaluation. Journal of Experimental Criminology, 3, 21-38	CCTV is viewed as a technique of "formal surveillance" and as such it might enhance or take the place of security personnel. Cameras can be used to aid crime prevention, the detection of offenders, and crowd control or public order scenarios. Based on two separate meta-analyses, overall, the evidence suggests that CCTV can reduce crime. There are, however, some important considerations as discussed below. In looking at crime type specifically, the most significant reductions were in vehicle crime and property crime and there was no evidence of an effect on violent crime.
	Retail tagging Sidebottom, A., Thornton, A., Tompson, L., Belur, J., Tilley, N., Bowers, K. and Johnson, S. D. (2017). A Systematic Review of Tagging as a Method to Reduce Theft in Retail Environments. What Works Centre for Crime Reduction, University College London	Tags are a type of security measure commonly used by retailers to prevent the theft of products and packaged goods. There are a variety of different types of tag (such as ink dye tags and electronic article surveillance tags), some of which are designed for specific products (such as bottles or clothing). Meta-analysis showed There is some evidence that tagging has either increased or decreased shop theft, but overall, it has not had a statistically significant effect on theft.
	Neighbourhood Watch Bennett, Trevor, Farrington, David and Holloway, Katy (2008) The Effectiveness of Neighbourhood Watch: A Systematic Review. Campbell Systematic Reviews.	Neighbourhood watch schemes aim to reduce crime by directly involving the community in activities that promote safety or assist with the detection of crime. They actively seek the greater involvement of local people in crime prevention activities. Overall, the evidence suggests that neighbourhood watch can reduce crime. There are however some important considerations, such as variation in practices across schemes, and large differences between countries in terms of observed reductions.

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	Street lighting Welsh, B., and Farrington, D.F. (2008). Effects of Improved Street Lighting on Crime. Campbell Collaboration Systematic Review. Campbell Collaboration: Norway.	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. Overall, the evidence suggests that the intervention can reduce crime.
	Speed cameras Steinbach, R., Perkins, C., Edwards, P., Beechers, D., Roberts, I. (2016) Speed cameras to reduce speeding traffic and road traffic injuries	Both fixed and mobile speed cameras are used to enforce traffic speed limits, detect speeding vehicles and reduce road traffic collisions and injuries that result from them. Overall, the evidence suggests that the intervention has reduced crime. The meta-analysis found that speed cameras led to reductions in: average speed (7%), proportion of vehicles exceeding the speed limit (52%), collisions (19%), collisions resulting in injury (18%) and in severe or fatal collisions (21%), when compared to sites with no speed cameras.
	Other Sources Completed research: Kerti, J. (undated). *MARAC Efficiency: A literature review:* http://keelestaffsknowledgeforum.org.uk/assets/Uploads/MARAC-Literature-Review.pdf	The primary aim of a Multi-Agency Risk Assessment Conference (MARAC) is to facilitate, exchange and evaluate different agencies' information regarding domestic abuse victim/s, who are considered at high risk of serious harm or homicide. 3 core areas for effective MARAC process: "appropriate agency representation; enhanced information sharing; and the role of the independent domestic violence advisors in representing and engaging the victim in the process. Issues include increased agency workloads, lack of victim engagement and a lack of a systematic risk assessment

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	Completed Research: Kerti, J. (undated). *How can we ensure consistent information is given to the MASH, whilst information tailored to agency needs is taken from the process?* http://library.college.police.uk/docs/PKF1/12_042.pdf	The Multi-Agency Safeguarding Hub (MASH) originated in 2011, with objectives of enforcing greater communication between agencies. Since MASH's inception, many different models have been developed each suited to particular regional needs. The foundation to a successful MASH model is the ability of those involved to be able to communicate in an efficient and effective manner. Collective agency acknowledgement of MASH participation is essential, alongside each agency understanding their importance to drive change and form solutions. Clarifying a reliable method of data sharing is central to a MASH's development. Inconsistencies in information exchange between agencies can hinder MASH developments. A well-functioning MASH requires a mutually beneficial structured and secure IT system.
	Completed Research: College of Policing (2012*). Factors associated with serious or persistent violent offending: Findings from a rapid evidence assessment.* https://whatworks.college.police.uk/Research/Documents/REA_violent_reoffending.pdf	Identification of serially violent individuals by the police could allow forces to be aware of and, where possible develop strategies to manage the risk to the public. This paper presents findings from a Rapid Evidence Assessment (REA) designed to explore the evidence base on factors associated with, or predictive of, known serious or persistent violent offending excluding domestic or sexual violence. An offending career that begins before the age of 14 is highly predictive of later violent offending and a longer criminal career (reported in 9 studies of which 4 were graded 1). • Individuals with a long criminal career are more likely to commit violent crimes (reported in 7 studies of which 5 were graded 1). • Individuals with a history of violence are more likely to commit further violent crimes (reported in 10 studies of which 5 were graded 1).

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3. Using big data to assess criminal behaviour and trafficking	**Research Map** 1. Ongoing work/prof: "Policing in the 2020s: 5 issues from a Delphi study"; College of Policing (current map)	The study sought to identify emerging issues that may have substantial effects on police policy and practice beyond the short term. The study is part of the College's strategic foresight work, which uses futures methodologies to explore how key trends, emerging issues and significant events might shape the future operating environment for policing. The study identified 5 issues likely to have an impact on policing, particularly in relation to cyber-attacks and technology related security threats: Artificial Intelligence and big data; The internet of things; Social differentiation; Ubiquitous encryption; Autonomous vehicles.
	2. Completed work/prof: "Systems thinking and complexity science for policing"; Prof Jeffrey Johnson (completed) https://www.open.ac.uk/centres/policing/researc h/theme-2-digitally-enabled-policing/208systems-thinking-and-complexity-sciencepolicing	This action research introduces police officers and staff to the basic ideas of systems thinking and complexity science and enables them to develop a practical understanding of the theory by applying it to real problems from their professional experience. The project will: • give hands-on experience of using the ideas in practical policing • develop simple gaming systems to allow interactive explorations • explore hands-on how Big Data can be used by teams in policing • organise workshops with teams developing and using computer models to identify areas for further investigation and research.
	3. Completed PhD: "Predicting crime using Big Data"; Ulster University (completed)	This PhD looks at how Big Data can be used to predict when and where the next crime will happen. Blending existing theories and algorithms into an optimal solution.

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	Other Sources	
	Completed research: Ojo, A. (2017). *Simulating crime patterns from the movements of victims and offenders.* http://library.college.police.uk/docs/PKF1/11_00 3.pdf	To develop an advanced, interpretive framework that: Is characterised by its bespoke purpose orientation, conceptual focus and spatial explicitness Is underpinned by a multi-level structure encompassing environmental, household and individual level descriptors of crime determinants Supports the scientific study of spatial and temporal inequalities in crime Provides utility to strategic and operational decision-making Incorporates comparative population specificity
4. Enabling sharing of data, evaluation and monitoring to enable better joint working	**Research Map** 1. Ongoing PhD: "Working together during major incidents and emergencies: optimising interoperability during major incident management using the social identity approach". Louise Davidson (current map)	Major incidents can have devastating effects on the public and be disruptive to society in general. These effects can be minimised and mitigated by a well-coordinated emergency response. However, there are persistent issues that occur in multi-agency response. This project will look at the ways that people work together both within and between different organisations, and how this understanding can be applied to improve the way in which emergency responders come together in a major incident to work towards a collective goal
	2.Ongoing PhD: "Multi-agency situated learning - learning together to develop effective practice delivery"; Sgt John Booker (Current map)	When encountering strategies requiring multi-agency delivery against common aims and objectives (e.g. Counter Terrorism Prevent Strategy, Every Child Matters, Care Act etc) does multi-agency situated learning develop effective practice in contrast to isolated learning when agencies only collaborate for delivery? Does this add value to practice?

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	3. Possibly completed work/prof: "N8 Policing Research Partnership: Innovation and the Application of Knowledge for More Effective Policing"; Adam Crawford (current map)	The project has been developed with policing partners and responds to key issues impacting on the police organisation: the impact of austerity measures and the need to refocus on preventative and proactive strategies and partnership approaches; the need for organisational change and a transformation of the culture of learning; and the need to systems and structures to facilitate knowledge exchange.
	4. Completed work/prof: "Better Policing Collaborative, Data Monitoring (Norfolk and Suffolk)"; Jack Catell (completed)	The aim of this project is to collate robust and high quality crime and policing data from across Norfolk and Suffolk; Provide context and information from the surrounding environment and to establish an ongoing process so this data is regularly updated to inform policy making. This work will enable the provision of key trend briefings on an on-going basis.
	5. Completed work/prof: "Interagency working with police, health and social care professionals in adult support and protection: a realistic evaluation approach (Phase 2)"; Dr Sundari Joseph (completed) https://www.researchgate.net/publication/32937 9238_Interagency_adult_support_and_protection_practice _A_realistic_evaluation_with_police_health_and _social_care_professionals	Supporting and protecting vulnerable members of society necessitates working across organisational boundaries and developing collaborative styles of leadership and multi-agency working. This project will investigate the 'state of play' for such cross boundary working by: identifying the gaps in interagency practice; evaluating the education and training needs of professionals working in the area of adult support and protection, identifying information sharing practices and then developing interprofessional and interagency training resources.
	6. Completed work/prof: "Better Policing Collaborative, PKF award - Knowledge Management Development and Dissemination". Steve Dale (completed)	Web-based technology enables networks that support the free flow of information and the ability to freely and easily connect with other people, e.g. peers, academics etc. This project involves two pieces of work. Firstly, a series of workshops and webinars will be run to encourage the

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		development of practice led, professional communities for knowledge sharing between academia, Office of the Police and Crime Commissioner and Forces. The second aspect will be a prototype "Knowledge Hub" to encourage the easy exchange of knowledge between groups.
6. Monitoring and analysing threats and hazards at incident scenes in real time, including the use of multiple and non-traditional sources such as crowd sourcing and social media	**Other Sources** Completed Research: Innes, M. (undated). *OSCAR working paper #1: Understanding The Policy Context for Open Source Communications Analytics: A Simulation Exercise with The Dept. For Communities & Local Government and The Home Office.* https://static1.squarespace.com/static/51b06364e4b02de2f57fd72e/t/590b39bfff7c500c50fba4f4/1493907906792/OSCAR+WP1+Policy+Context.pdf	This document reports findings from a policy development exercise designed to investigate how the increasing use of social media is altering the policy and practice context for monitoring and managing community tensions and cohesion, especially in terms of the community impacts of terrorist attacks and other major events. The work was conducted in partnership with staff from the Dept. for Communities and Local Government and the Home Office.

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	Completed Research: OSCAR (undated) *Open Source Communications Analytics Research (OSCAR) Development Centre: Final Report.* https://static1.squarespace.com/static/51b06364e4b02de2f57fd72e/t/5d6fd50550163a000115da0d/1567610135262/OSCAR-Final-Report-ExecSummary.pdf	Key recommendations: Open Source (OS) communications conducted via the internet and social media platforms are the new public spaces of social life in the information age. The UK police service's approach to developing open source capacity and capability to respond to the rapidly evolving information environment is fragmented and fractured. In establishing this more strategic position, the police service needs to take seriously the idea that policing can and should apply open source communications data differently to 'pure' intelligence agencies. The implication of the above is that forces move to blend corporate communications and OS intelligence capabilities to meaningfully engage with the information age. Police should recruit or make arrangements to routinely access data scientists. The OSCAR Program has demonstrated the police service can build highly effective and agile working partnerships with academia providing a 'knowledge accelerator' and 'skunkworks' R&D capacity and capability. A new organisational model for OS work is advocated. This is predicated upon establishing OS + all-source teams. Police seem reluctant to engage in digital behavioural influence messaging. Individually and collectively, UK police forces should examine their technological and data requirements. Dynamic Learning - the OSCAR experience suggests wider implications for the development of evidence based policing approaches.
7. How do we detect and mitigate	**Research Map**	

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threats, crime and smuggling?	1. Ongoing PhD: "Examining the use of business analysis techniques to police organised criminal networks"; Chris Allen (current map)	Organised criminals mimic the operation of sophisticated businesses –the only difference being the product they sell is illegal. On this basis, the researcher will apply established economic analysis techniques to these groups in order to enhance the development of policing strategies and tactics surrounding their disruption.
	2. Completed work/prof: "What works for reducing domestic abuse: A multi-site process evaluation of risk-led policing and the DASH risk assessment tool"; Dr Amanda Robinson (completed) https://whatworks.college.police.uk/Research/Documents/Risk-led_policing_and_DASH_risk_model.pdf	The overall aim of the research is to find out how risk-led policing takes place in England and Wales and to examine the role of the Domestic Abuse, Stalking, Harassment and Honour (DASH) risk assessment tool within the police response to domestic abuse, so that the strengths and limitations of differing approaches may be identified and recommendations for improved practice established
	3. Completed work/prof: "Better Policing Collaborative, PKF award – KIRAT – child sexual exploitation risk assessment tool". Professor Laurence Alison (completed)	This risk assessment tool assists police in identifying which indecent image of children (IIOC) offenders are at greater risk of also committing contact sexual offences (80% predictive accuracy), enabling prioritising of resources. This multi-disciplinary project will develop the predictive validity of this tool, assess its cost effectiveness and facilitate knowledge translation between police forces and academics.
	4. Completed work/prof: "Piloting a revised risk assessment tool for frontline police officers". College of Policing (completed) https://whatworks.college.police.uk/Research/Documents/DA_risk_assessment_pilot.pdf	The College, in partnership with Cardiff University and UCL, recently conducted a review of the DASH risk model. A number of key implications emerged from that work including a recommendation for a more focused risk tool to help officers identify dangerous patterns of abusive behaviour, including coercive control. The College are developing a more focused risk tool for frontline police officers. The tool will be piloted in three police force areas.

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	5. Completed work/prof: "Predictive mapping of crime in a law enforcement context: a technical review of models and software packages". College of Policing (completed) https://www.college.police.uk/FOI/Documents/FOIA-2018-0059.pdf	The Urban Institute (UI) was commissioned by the National Policing Improvement Agency to undertake a technical review of existing predictive crime mapping models and software packages to provide information to assist police organisations' decision making regarding their use of predictive analysis and associated tools. This project aims to update the review produced by the UI to make it easier to navigate and understand as a resource for police practitioners and analysts to inform decisions about which approach to predictive policing to explore.
	6. Completed work/prof: "Which burglary security devices work for whom and in what context?"; Professor Andromachi Tseloni (completed)	Domestic burglary is a high-volume crime affecting many households. As well as substantial financial loss and damage to property, it causes high levels of anxiety about the possibility of being burgled. This research study aims to assess the effectiveness of burglar alarms in different areas, accommodation types and occupants' characteristics.
	7. Completed work/prof: "Evaluation of #RU2Drunk breathalyser initiative in the night-time economy"; Dr Hannah Farrimond and Dr Katharine Boyd (completed) https://journals.sagepub.com/doi/10.1177/1477370817749498	In December 2014 the South Devon police implemented the pilot #RU2drunk initiative that aimed to reduce alcohol related violence. The aim of the evaluation is to assess whether a) the initiative has an effect on alcohol-related crime and any other type of crime and b) the acceptability of the intervention, in terms of the media, public and other stakeholders such as door and bar staff and management.
	8. Completed work/prof: "A systematic review of the effectiveness of the electronic monitoring of offenders"; Dr Jyoti Belur (completed) https://whatworks.college.police.uk/Research/Systematic_Review_Series/Documents/Electronic_monitoring_SR.pdf	The aim of this systematic review is to appraise existing evidence on the efficacy of electronic monitoring (EM) of offenders as a crime reduction initiative.

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	9. Completed work/prof: "Personal security alarms for the prevention of assaults: A systematic review"; Dr Phil Edwards (completed) http://whatworks.college.police.uk/Research/Systematic_Review_Series/Documents/Personal_security_alarms_SR.pdf	Personal security alarms may send a deterrent message to potential offenders, while also increasing personal confidence and decreasing fear of assaults. The aim of this project is to conduct a systematic review of the effect of personal security alarms in reducing assaults.
	10. Completed PhD: "Modelling and optimising police patrol"; Oliver Hutt (completed) http://library.college.police.uk/docs/theses/Hutt_Deterrent_Effect_Of_Police_Patrol_2019	The research aims to improve the efficacy of police foot patrol by investigating the inaccuracy of police recorded crime data and find processes or analytical methods that can mitigate the impact of these inaccuracies in determining where and when preventative patrols should be targeted.
	11. Possibly completed work/prof: "Understanding and improving risk assessment on domestic violence cases using machine learning tools"; Juanjo Medina (current)	This project contributes to the much-needed evidence base on domestic violence in an attempt to improve prevention of this social problem. It is particularly interested in developing knowledge to improve the current risk assessment tools used by the police.
	12. Possibly completed work/prof: "Threat, risk and harm: scoring of OCGs (Organised Crime Groups)"; Paul Mulholland (current)	The National Crime Agency (NCA) makes use of an Organised Crime Group Mapping (OCGM) process to capture information about active Organised Crime Groups (OCGs) in the UK. A scoring mechanism is then used to translate the set of captured OCG features into a risk of harm assessment score. The aim of this project is to analyse the process by looking at the method currently used by OCG contributors to describe the features of the OCGs and the method currently used by the NCA to determine risk of harm from the aggregated OCG data. Findings will be used to recommend improvements to how OCGs are described (i.e. how data is captured) and how those descriptions can be used most effectively in order to calculate risk.

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	13. Possibly completed work/prof: "Evaluation of the implementation of domestic abuse perpetrator panels across West Mercia"; Prof Erica Bowen (current)	The Drive programme is a multi-agency model through which high-risk domestic violence perpetrators are identified and managed. High-risk perpetrators will be identified by the Multi-Agency Risk Assessment Conferences (MARACs) or by the police and will be referred to a new Domestic Abuse Perpetrator Panel (DAPP) which will then determine whether the perpetrator is referred into the Drive model or not. This evaluation will address the following questions: - Is the DAPP acceptable to project stakeholders? - Who is referred to Drive, and who is most likely to engage with the programme? - How does the programme impact on the police response to domestic abuse?
	14. Ongoing PhD: "Predictive policing: A change in the creation of suspicion?"; Daniel Marciniak (current map)	This research explores changes brought about by the introduction of predictive policing technologies such as the spatial prediction of crime and the risk scoring of individual offenders and vulnerable persons. Areas of interest include officer decision making, evaluation, and organisational change (with a focus on the distribution of insight).
	15. Ongoing work/prof: "Evaluating the Think Family Early Intervention programme"; College of Policing (current map)	This is an evaluation of Avon and Somerset Police's Think Family Early Intervention programme that involves allocating Police Community Support Officers and Police Constables to support families. Families are selected based on their experience of multiple challenges, which may include crime, anti-social behaviour, truancy, unemployment, mental health and domestic abuse. Families are signposted to key workers, school workers and council agencies. The ultimate aim is to prevent early warnings escalating into an intergenerational cycle of offending, and to reduce demand from these families on public services.

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	16. Ongoing work/prof: "Evaluating Surrey Police's High Harm Perpetrator Unit"; College of Policing (current map)	This is an evaluation of Surrey Police's 'High Harm Perpetrator Unit' (HHPU). The aim of the intervention is to deliver improved offender management, through development of omnicompetent offender managers (OMs) who are able to efficiently and confidently manage the risks of high harm suspects/offenders. The research project will evaluate the implementation of the HHPU, and the application of the algorithm to identify cohorts of high harm suspects who would not be traditionally identified through IOM/ViSOR.
	17. Ongoing work/prof: "Evaluating Operation Divan: An intervention targeting young people believed to be in possession of a knife or other weapon" College of Policing (current map)	This is an evaluation of an intervention which uses intelligence to identify young people who are suspected of carrying knives or other weapons. The aim of the intervention is to educate young people at the earliest opportunity to reduce weapon carrying, raise awareness of risks and consequences, and to provide support to safeguard young people and reduce their likelihood of offending.
	18. Possibly completed work/prof: "The national ARMS evaluation"; Dr Natalie Munn (current map)	In 2014, a new risk assessment tool for use with male registered sex offenders was implemented. The Active Risk Management System (ARMS) provides a national standard for the risk assessment of sexual offenders and risk management planning. The main aim of the research is to conduct a national evaluation of ARMS in order to understand how police and probation can most effectively use ARMS to manage and monitor registered sexual offenders in the community.
	19. Ongoing work/prof: "Using the SAM/SARA v3 to assess and manage risk"; College of Policing (Current map)	This is an evaluation of a pilot intervention project involving the use of two risk tools: the Spousal Assault Risk Assessment (SARA v3) and Stalking Assessment and Management (SAM). The aim of using these tools is to improve the risk assessment/management of perpetrators of domestic violence and stalking, thereby reducing offending or reoffending of these individuals and helping to safeguard victims.

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	20. Ongoing prof/work: "Recognising and responding to vulnerability-related risks". College of Policing (current map)	This looks at the development of policing guidelines on responding to vulnerability-related risks. Most notably: 1. Recognition: How to spot the signs of vulnerability, 2. Responding: How to create a safe, trusting environment to encourage the disclosure of risk/ harm and elicit the information required to inform appropriate actions to keep people safe. 3. Support: How forces can support frontline staff to recognise and respond to vulnerability within the scope of their duties as a police officer/ police staff.
	21. Ongoing PhD: "Assessing the risk in domestic abuse: towards the development of an operationally useful domestic abuse risk assessment tool"; Paul Hargreaves (current map)	The key aim of the research is to empirically validate the policing response to domestic abuse and develop a framework that is operationally useful to those front-line officers dealing with domestic abuse.
	22. Ongoing PhD: "The development and piloting of internet sex offender risk assessment within Cleveland Police"; Laura Foster-Hick (current map)	The aim of the project is to use research surrounding evidence-based policing and offender desistance policing to enable a risk assessment to be used specifically with internet sex offenders (ISO) to be developed and piloted by Cleveland Police.
	Other Sources Completed research: Bond, E. & Tyrell, K. *Understanding Revenge Pornography: A national survey of police officers and staff in*	The study set out to investigate police knowledge of revenge pornography legislation, their confidence in responding to cases of revenge pornography, and what level of training they had received. A total of 783

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	England and Wales: https://journals.sagepub.com/doi/abs/10.1177/0886260518760011	members of the police force responded to the survey and, to the authors' knowledge, this the first study to seek to quantify the understanding of revenge pornography by police officers and staff in England and Wales. The findings suggest that the police in the United Kingdom have a limited understanding of revenge pornography legislation and lack confidence both in investigating cases and in effectively responding to victims. The implications of the study demonstrate that there is an urgent need for training across police forces to ensure that cases of revenge pornography are appropriately responded to, victims are safeguarded, and offenders brought to justice.
	Completed Research: Long, M. et al (2016). *KIRAT: Law enforcement's prioritization tool for investigating indecent image offenders*: https://doi.apa.org/doiLanding?doi=10.1037%2Flaw0000069	This article examines the validity of the Kent Internet Risk Assessment Tool—Version 2 (KIRAT– 2), an evidence-based framework for prioritizing IIOC suspects according to their risk of committing contact offenses against children. The model classified 97.6% of high risk within the higher risk levels (high or very high) and 62.3% of low risk within the lower risk levels (low or medium). Findings are discussed in terms of contribution to the Internet sex offending risk assessment literature and practical implications for police forces.

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	Completed Research: University of Northampton (2017*). Policing human trafficking in the UK: building relationships and partnership working with local non-specialised organisations to identify and support victims.* http://library.college.police.uk/docs/PKF1/07_034.pdf	This article explored engagement and partnership working between police and local non specialized organisations with regards to human trafficking in Leicester, England. It focused on the views of professionals from agencies who are likely to have come into contact with individuals who have been trafficked, in order to explore existing partnership working with police, and how these relationships and the identification of, and support available to, trafficked persons could be improved. Professionals outlined perceived barriers to the reporting of human trafficking by potential victims to the police. These included: immigration status and a fear of being deported. The barriers which professionals encountered included a lack of information about the situation), and additional concerns about how to obtain information from the victim. Professionals also felt that they needed clear evidence to be able to report, that their suspicions alone were not enough to warrant reporting to the police and had concerns regarding consent from the service user.
	Completed Research: Rutland, A., Blazek, M. & Lumsden, K. (2017). *Anti-trafficking and local practitioners: insights from England*: http://library.college.police.uk/docs/PKF1/07_035.pdf	In this paper, we explore the role of non-specialised community-based organisations in antitrafficking, particularly in the identification of trafficking and trafficked persons and the facilitation of further contact with other agencies. First, wider considerations need to be given to the local scale of trafficking, as gaps in relationships and communication facilitate human trafficking at the local level as much as wider transnational infrastructures and mobilities do. Second, although non-specialised local practitioners deal with insufficient knowledge and awareness about human trafficking, their capacity for training can be limited by wider austerity policies and increase in responsibility and demands. Third, we suggest that agencies might struggle to comprehend the full realities and concerns of trafficked persons if they work from their individual perspectives.

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| | Completed Research: Millings, M. & Watkinson, C. (2016). *Would a 'power few' approach allow Merseyside Police to be more effective and efficient in managing domestic abuse perpetrators?* http://library.college.police.uk/docs/PKF1/11_002.pdf | Overall, participants were generally in support of the 'power few' concept. There was an agreement by all professionals that there needed to be some refocus on the offenders of domestic abuse. Many professionals felt the current policing practices were extremely victim focussed and much more emphasis needs to be directed towards perpetrators.

Professionals felt that the 'power few' approach could have some real strengths. This was mainly focussed on the demand reduction element of such a tactic. Officers and practitioner partners felt that targeting those offenders who account for a vast amount of resource would have some real impact on demand reduction in the long run. Officers and partners were also concerned, based on current practice, about the available support and monitoring of low-level bronze victims. It was hoped that an approach such as this one would highlight those low level but repeat offences, which could potentially capture both the victim and offender more holistically than currently.

The support for the 'power few' approach was based on the initial overarching idea, and professionals suggested in an ideal world this approach would be hypothetically effective. However, professionals shared their concerns around some of the practicalities and barriers that the Force may face when trying to implement such an approach |
| 8.   Increased exposure to cyber harms and use of online platforms to facilitate extremism | **Research Map**

1. Ongoing work/prof: "Policing in the 2020s: 5 issues from a Delphi study"; College of Policing (current map) | The study sought to identify emerging issues that may have substantial effects on police policy and practice beyond the short term. The study is part of the College's strategic foresight work, which uses futures |

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		methodologies to explore how key trends, emerging issues and significant events might shape the future operating environment for policing. The study identified 5 issues likely to have an impact on policing, particularly in relation to cyber-attacks and technology related security threats: Artificial Intelligence and big data; The internet of things; Social differentiation; Ubiquitous encryption; Autonomous vehicles
	2.Ongoing work/prof: "Policing cybercrime in the Cloud"; David Wall (current map)	This interdisciplinary research is part of the Combatting Criminals In The Cloud (CRITiCal) project funded by the EPSRC/ESRC Contrails. It looks at a) how we understand Cybercrime in the Cloud; b) who the offender groups are and what types of data and evidence are required to bring them to account for their actions, either in court or elsewhere; c) what interventions can be used to prevent them from committing more serious cybercrimes.
	3. Ongoing PhD: "Profiling victims of cybercrime and fraud in Wales" Sarah Correia (current map)	ONS figures point towards an estimated 5.1 million cybercrimes and frauds and 2.5 million offences under the Computer Misuse Act – including hacking, identity theft and spread of malware – in the year leading up to June 2015 (ONS 2015). Yet there remains no evidence-based understanding of ID theft and on-line fraud victimisation within Wales. As such, using victim-report data to profile cybercrime victims in Wales provides an important insight into cybercrime victimisation within the region and a blueprint for further research beyond Wales.
	4.Ongoing PhD; "Cybercrime, place, and the internet"; Octavian Bordeanu (current map)	Data from the Crime Survey of England and Wales clearly show that cybercrime is a substantial problem for the public, accounting for about 50% of all crime. As more and more services go online, the problem is likely to grow in volume, as is the range of crimes committed. The aim of the project is to examine whether lessons learned in relation to urban crime can be applied or adapted in online environments. The primary aim of the proposed work is to develop a general framework for the analysis of crime occurring in non-geographic spaces

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5. Ongoing PhD: "An evaluation of cybersecurity readiness of police forces in the UK"; Eric Amaechi (current map)	The main objectives of this research are: To explore the existing cybersecurity threats/attacks and problems in police forces; To investigate cybersecurity readiness of UK police forces from technical, organisational and human perspectives; To investigate ways to improve cybersecurity readiness within the police forces. To extend a suitable framework for the investigations of cybersecurity readiness in police forces.
6. Possibly completed work/prof: "Paedophile hunters: An online ethnographic examination of cyber vigilantism"; Dr Andy Williams (current map)	As this is a relatively recent phenomenon, which uses social media platforms to both catch and publicize alleged sexual groomers of there is little academic research on the types of grooming communication that takes place, or what the public think about these self-appointed cyber activist groups. Secondly, there has been no research on the impact that such activities have on policing online child sexual offences or how the 'evidence' collected by the hunter groups is used or impacts upon a subsequent criminal investigation.
7. Possibly completed PhD: "Terrorism pReventIon Via rAdicaLisation countEr-NarraTive (TRIVALENT)"; Harith Alani (current map)	The project, called TRIVALENT, is looking at ways to protect citizens around the globe from being targeted, and potentially enticed into endorsing and propagating violent radical content. The goal is to create a more comprehensive understanding of violent radicalisation, by investigating the psychological and behavioural patterns, models and motivations for individuals.
8. Ongoing PhD: "The role of religious narratives in use in the radicalisation of British Muslims". Zaf Shah (current map)	The aim of the project during phase one of the study is to understand Islamist narratives and their relevance to the radicalisation of British Muslims. The content of the sermons, delivered using mainly online platforms will be studied by analysing the linguistic style of the sermons either that are online, on videos sharing sites such as YouTube, or that are available on the websites of religious institutions. It is envisaged that the first part of the study will have one main theme, and that is a critical linguistic analysis of religious sermons and their radicalisation effect.

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	9. Completed work/prof: "Effective 24/7 Points of Contact for international cooperation on cybercrime and electronic evidence: promotion of good practices"; Prof Robin Bryant (completed)	This project analyses existing international cooperation mechanisms, initiatives and actions that have sought to identify methods of enhancing investigative and prosecutorial actions for cybercrime and other crimes involving electronic evidence. The project will provide a unique insight into each of the current initiatives, together with a compare and contrast analysis.
	10. Completed work/prof: "Cybercrime: Trading arguments: Proactively supporting digital forensics investigations of (potential) cybercrimes"; Professor Bashar Nuseibeh (completed)	The increase in cybercrime is raising new challenges for policing, particularly as the methods that cyber criminals use are increasingly complex and often unfamiliar to both victims and law enforcement agencies. This research project aims to address these challenges. Based on historical examples of criminal activity and an assessment of digital investigation processes and capabilities - the action research project will develop a framework for cybercrime forensic investigations (CFI) to support the development of a "forensic-aware" digital evidence collection tool.
	11. Completed work/prof: "Systematic Evidence Review of Cyber-Crime"; Dr David Hicks (completed) http://library.college.police.uk/docs/PKF1/02_031.pdf	Whilst the means of offending have changed with new technology, the underlying causes of crime may not have changed significantly, therefore the fundamental insights that have led to successful detection and prosecution of 'traditional' crime are still of relevance. This review will identify the 'evidence gap' and develop a practical evidence typology. The evidence review will support the work of the emerging new arrangements in Forces where specialist units are being developed and/or regional cyber

		units and will also provide evaluation and technical support to shape evidence based tactical and strategic decisions.

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	12. Completed PhD: "The application of science to the investigation of the Trojan defence"; Ian Kennedy (completed)	Computer viruses and Trojans (or malware) often arise during the investigation of cybercrime. How do we know if this is a genuine case of mistaken identity or if the suspect is simply trying to hide behind a Trojan Defence? This research explores the tools, skills and knowledge that make up current malware investigative practice and highlights a lack of scientific rigor in its application to forensic computer investigations involving malware. The design for a malware analysis tool evaluation framework (MATEF) is presented, designed to give insight into the statistical performance of tools capable of being used for malware analysis in a forensic investigation.
	13. Completed work/prof: "Cybercrime Awareness Clinic"; Dr Vasileios Karaggianopoulos (completed) https://researchportal.port.ac.uk/portal/files/16037279/The_Portsmouth_Cybercrime_Awareness _Clinic_Project_Key_Findings_and_Recommen dations_October_2019.pdf	This project aims to develop and pilot a Cybercrime Awareness Clinic to raise awareness of and build resilience to cybercrime among the local community and businesses. The clinic aims to raise awareness of and build resilience to cybercrime for local communities and businesses. It will create an innovative research and collaboration space, directly involving members of the public and SMEs in mapping the cyber threats the local community faces and providing tailored advice.

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	Other Sources	
	Ongoing research: Anderson, R. *Tracking COVID cybercrime and abuse.*	Around half of all acquisitive crime was already online before the start of the pandemic; it is now surging as many human activities move online chaotically, and cybercriminals adapt to the opportunities. This project will collect data at scale about online criminality, quickly enough to fetch malicious material before it is removed. We will not work alone but will promptly provide datasets to other researchers, and collaborate to create better analysis tools, analyse offender behaviour, and monitor the effectiveness of police and industry response. Our Cambridge Cybercrime Centre already collects data from underground forums, spam feeds, and industry partners, but we will ensure that pandemic related cybercrime Is prioritised and new datasets collected about online abuse and extremist views, such as anti-vaxxers. To scale up our work, we need to maintain and expand our network of honeypots and other sensors; extend our server cluster; scrape dozens more underground forums; and extend our collection of chat channels and illicit marketplaces - which are often found on Tor hidden services. We have an established ethical framework for data collection and a straightforward legal framework for data sharing, but a current bottleneck is that non-technical users can be swamped by what we provide, so we need to develop neuro-linguistic programming tools to enable easier analysis of the data by researchers from other disciplines. We will also do our own analysis, for research to identify opportunities for law enforcement action, and to measure the effectiveness of responses by law enforcement and industry.

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	Completed Research: Collier, B et al (2020). *The implications of the COVID-19 pandemic for cybercrime policing in Scotland: A rapid review of the evidence and future considerations*: http://www.sipr.ac.uk/assets/files/REiP%20-%20Pandemic%20Cyber%20-%20Collier_Horgan_Jones_Shepherd.pdf	The response to COVID-19 has given rise to numerous cybercrime attempts, including a limited range of novel attack vectors (such as mentioning tracing apps), and attacks that have referred to (genuine) government policy announcements in order to trick users. Conventional forms of cybercrime are taking advantage of the context of heightened fear and greater public demand for knowledge and security and are adapting existing cybercrime attack vectors with a 'COVID' flavour. We are also observing uplifts and reconfigurations to mass-scale or 'volume' cybercrime due to transformations in the economy and in the routines of everyday life. This potentially amounts to initial indications of a large and sustained increase in online crime. The UK has a sophisticated cyber security apparatus particularly at the national level. However, the UK may currently lack sufficient capability at the local level to police cybercrime adequately if there were to be a significant increase in 'volume' cybercrime offences.
	Completed research: Hawton, J., Parti, K. & Dearden, T. (2020). *Cybercrime in America amid COVID-19: the Initial Results from a Natural Experiment*: https://link.springer.com/article/10.1007/s12103020-09534-4	The shift to the digital world undoubtedly creates new opportunities and platforms for motivated offenders to engage in various illegal activities. This shift should increase the number of suitable targets, as millions of people are confined to their homes and forced to work, study, and socialize online. The current shift was swift, but, at least according to our data, this shift apparently did not result in people being more affected by cybercrime. They may be reporting more of it, but it is also possible that the pandemic has led to a decrease in most street crimes, an increase in domestic crimes, and no change in cybercrimes.
	Completed research: Naidoo, R. (2020). *A multilevel influence model of COVID-19 themed cybercrime*: https://orsociety.tandfonline.com/doi/full/10.1080/0960085X.2020.1771222#.XxaagXecE2x	Cybersecurity or IT departments should make users aware of the scams targeting remote workers (Anderson & Agarwal, 2010; Hart, 2009). While users working remotely can ensure that their home computer and other devices are protected by installing the latest anti-spam, anti-spyware and anti-virus software and by keeping their operating system up to date,

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		cybersecurity or IT departments can assist by installing anti-malware and anti-phishing solutions to the home devices of remote workers to prevent many of these malicious emails and payloads from reaching them. Furthermore, IT departments should monitor and filter email phishing scams with headers, such as "Coronavirus Sensitive Matter" or "COVID-19 update". Additionally, phishing emails that mimic credible institutions, such as the World Health Organisation (WHO) should be filtered (Figure A1). For example, WHO's email address does not end as follows: "@who.com", "@who.org" or "@who-safety.org".

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9. How will disinformation techniques evolve to profit from the crisis? How do different societies or groups imbibe, use or combat rumour and misinformation?	**Other Sources** Completed research: Europol (2020). *Catching the virus: Cybercrime, disinformation and the COVID-19 Pandemic*: https://www.europol.europa.eu/publicationsdocuments/catching-virus-cybercrimedisinformation-and-covid-19-pandemic	The impact of the COVID-19 pandemic on cybercrime has been the most visible and striking compared to other criminal activities. • Criminals active in cybercrime have been able to adapt quickly and capitalise on the anxieties and fears of their victims. • Phishing and ransomware campaigns are being launched to exploit the current crisis and are expected to continue to increase in scope and scale. • Activity around the distribution of child sexual exploitation material online appears to be on the increase, based on a number of indicators. • The dark web continues to host various platforms such as marketplaces and vendor shops to distribute illicit goods and services. • After an initial fluctuation in sales via the dark web at the beginning of the crisis in Europe, the situation stabilised throughout March 2020. • Vendors attempt to innovate by offering COVID-19 related products. • Demand and supply dynamics for some goods are likely to be affected if product scarcity occurs via distributors on the surface web. • Criminal organisations, states and state-backed actors seek to exploit the public health crisis to make a profit or advance geopolitical interests. • Increased disinformation and misinformation around COVID-19 continues to proliferate around the world, with potentially harmful consequences for public health and effective crisis communication.

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	Completed Research: Robinson, O., Coleman, A. & Sardarizadeh, S. (2019) '*A Report on AntiDisinformation Initiatives'*. https://comprop.oii.ox.ac.uk/wp-content/uploads/sites/93/2019/08/A-Report-ofAnti-Disinformation-Initiatives	In this report, BBC Monitoring's specialist Disinformation Team investigates fake news landscapes around the world and analyses a range of measures adopted by governments to combat disinformation. The analysis provides geopolitical context with timely, relevant examples from 19 countries in four continents (with a particular focus on European nations). The team also reports on the European Union because of its size, power, and influence.
	Innes, M., Dobreva, D. and Innes, H. (2019) *'Disinformation and digital influencing after terrorism: spoofing, truthing and social proofing'*, Journal of the Academy of Social Sciences: https://www.tandfonline.com/doi/full/10.1080/215 82041.2019.1569714	This article explores how digital communications platforms are used in the aftermath of terrorist attacks to amplify or constrain the wider social impacts and consequences of politically motivated violence. Informed by empirical data collected by monitoring social media platforms following four terrorist attacks in the UK in 2017, the analysis focusses on the role of 'soft facts' (rumours/conspiracy theories/fake news/propaganda) in influencing public understandings and definitions of the situation. Specifically, it identifies three digital influence engineering techniques – spoofing, truthing and social proofing – that are associated with the communication of misinformation and disinformation.
	Completed Research: Innes, M., Innes, H., Dobreva, D., Chermak, S., Huey, L. and McGovern, A. (2018) *'From Minutes to Months: A rapid evidence assessment of the impact of media and social media during and after terror events'* Report to the five-country ministerial countering violent extremism working group. https://www.cardiff.ac.uk/__data/assets/pdf_file/0008/1462373/M2M-Report-Final.pdf	This document reports findings from a Rapid Evidence Assessment conducted on the role of mass and social media during and after terrorist events. It is designed to bring together and synthesize insights and evidence from the available published research literature to inform future policy and practice development. By promoting understanding of how different forms of mediated communication shape what happens in the aftermath of terror events, the work seeks to reflect changes in both the conduct of terrorism and the contemporary information environment. In particular, the spread of social media has had disruptive and transformative impacts upon press and broadcast journalism, and the ways that terrorist violence is performed.

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10. Changes in the opportunity structure for crime and in the drivers of the tendency to criminal behaviour, whether social, innate or environmental	**Research Map** 1. Ongoing work/prof: "Policing in the 2020s: 5 issues from a Delphi study"; College of Policing (current map)	The study sought to identify emerging issues that may have substantial effects on police policy and practice beyond the short term. The study is part of the College's strategic foresight work, which uses futures methodologies to explore how key trends, emerging issues and significant events might shape the future operating environment for policing. The study identified 5 issues likely to have an impact on policing, particularly in relation to cyber-attacks and technology related security threats: AI and big data; The internet of Things; social differentiation; ubiquitous encryption; autonomous vehicles.
	2. Ongoing work/prof: "Reducing the unanticipated crime harms of COVID-19 policies"; Graham Farrell (current map)	The COVID-19 crisis is changing the shape of crime. COVID-19 gives fraudsters a 'conversation starter' to approach people in-person, via text, email and online. Remote working and online leisure activities, furloughs and financial difficulties, provide more potential targets for online crimes of various types. Vulnerable groups including the elderly and disabled are more at risk. The aim of the project is to inform policy and practice, producing deliverables including policy and practice briefings and research articles.
	3. Completed PhD: "An analysis of vehicle crime repeat victimisation in Leicestershire: What impact do contextual influences have on spatiotemporal patterns of offending?". Loughborough University (completed)	This study focuses upon assessing patterns of vehicle crime repeat victimisation within the Leicestershire Police Force Boundary. The researcher is interested in understanding the contexts which continually experience high counts of stolen motor vehicles or motor vehicles having property stolen from them. The characteristics of these locations will be explored so that their vulnerabilities might be better managed and improved crime prevention measures implemented.

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	4. Completed PhD: "Counterfeit crop protection products: a study of an emerging crime threat to the UK agricultural industry"; Christopher Sambrook (completed) https://hau.repository.guildhe.ac.uk/17300/1/Chris%20Sambrook.pdf	The research will test the hypothesis that counterfeit crop protection products are becoming increasingly prevalent within the UK agricultural sector and, as a consequence of structural influences which incline police forces to focus on other forms of rural criminality, it is a crime which is currently under-policed. It therefore presents an emerging threat to the industry.
	5. Completed work/prof: "Understanding Anti-Social Behaviour"; Professor Andromachi Tseloni (completed)	The research seeks to develop as comprehensive an understanding of Anti-Social Behaviour (ASB) as possible. The broad aims of the research are to: • Identify the frequency at which different types of ASB are experienced. • Explore the relationship between ASB and crime victimisation, i.e. are victims of ASB more likely to also be victims of crime? and • Identify the individual, household and location characteristics which are predictive of experiencing ASB.
	6. Completed PhD: "Farm Crime in England and Wales: A Preliminary Scoping Study Examining Farmer Attitudes"; Kresida Smith (completed) https://hau.collections.crest.ac.uk/17339/	Many of the accepted theories of crime prevention are urban based and reflect conventional housing patterns. Only a few researchers have considered rural settlement patterns. This project aims to evaluate farmers' crime prevention responses in relation to rising rural crime rates; To ascertain whether farms are more likely to be targeted than other rural properties and which sort of farm property is most vulnerable and to assess the effectiveness and uptake of current crime prevention measures, both physical and policy focused.
	7. Ongoing work/prof: "COVID-19 and child criminal exploitation: Closing urgent knowledge and data gaps on the implications of pandemic for county lines"; Dr Ben Brewster (current map)	This research will assess changes and continuities in perpetrator behaviour resulting from social distancing, showing whether criminal business models are likely to change due to a changing risk and/or profitability profile.

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	Other Sources	
	Completed research: Halford, E. et al (2020). *CRIME AND CORONAVIRUS: SOCIAL DISTANCING, LOCKDOWN, AND THE MOBILITY ELASTICITY OF CRIME:* https://osf.io/preprints/socarxiv/4qzca/	We examine crime effects for one UK police force area in comparison to 5-year averages. There is variation in the onset of change by crime type, some declining from the WHO 'global pandemic' announcement of 11 March, others later. By one week after the 23 March lockdown, all recorded crime had declined 41%, with variation: shoplifting (-62%), theft (-52%), domestic abuse (-45%), theft from vehicle (-43%), assault (-36%), burglary dwelling (-25%) and burglary non-dwelling (-25%). We use Google COVID-19 Consumer Mobility Reports to calculate the Mobility Elasticity of Crime (MEC) for four crime types, finding shoplifting and other theft inelastic but responsive to reduced retail sector mobility (MEC = 0.84, 0.71 respectively), burglary dwelling elastic to increases in residential area mobility (-1), with assault inelastic but responsive to reduced workplace mobility (0.56). We theorise that crime rate changes were primarily caused by those in mobility, suggesting a mobility theory of crime change in the pandemic. We identify implications for crime theory, policy and future research.

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11. Relationship between extremism and integration, dynamics of friendship/familial and community relationships, and links between hate crime, other crimes and extremism	**Research Map** 1. Ongoing PhD "The role of collective psychological empowerment and a 'victim' identity of perpetrators in religiously and racially aggravated hate crimes"; Carina Hoerst (current map).	A social identity framework can help to explain how external factors (e.g., national rhetoric, electoral outcomes) lead to in-group extension ('xenophobic British Whites') and outgroup creation (everyone not 'truly British'). Hostile actions are established and xenophobes´ social identity is realized, which can increase further hate. This can lead to intergroup aggression, violence, feelings of injustice and deprivation. By comparing characteristics of spikes emerging after political events, after incidents that pose threats to public safety (i.e., terror attacks), further incidences can be predicted. Advisory agencies and authorities (e.g., the Commission for Countering Extremism and police forces) benefit from the outcomes of this research since enhanced knowledge about selective hostility as a reaction to events of different nature allows greater efficacy in prevention and tackling of public disorders.
	2. Ongoing PhD "Understanding Preventive Counter-terrorism policing: What shapes police practitioner understandings of preventive counter-terrorism?"; Haydn Kemp (current map).	Preventive counter-terrorism policing is often criticised as intrusive, ineffective, counterproductive and misidentifying innocent people as 'suspect', suggesting the need for constant refinement and improvement. This study aims to: i) obtain a deep and theoretical understanding of what external, non-security sensitive, knowledge sources inform police counterterrorism worker comprehension of terrorism ii) understand how knowledge is formed and operationalized and describe the lived experiences of counter-terrorism workers iii) determine if engagement with, and learning from, research has tangible benefits for front-line counter terrorism practice.

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	3. Ongoing PhD "Terrorism prevention via radicalisation counter-narrative (TRIVALENT)"; Harith Alani (current map).	The project, called TRIVALENT, is looking at ways to protect citizens around the globe from being targeted, and potentially enticed into endorsing and propagating violent radical content. The goal is to create a more comprehensive understanding of violent radicalisation, by investigating the psychological and behavioural patterns, models and motivations for individuals. This will include the assessment of radicals' language, integrations into online networks of radicals and the spread of radicalisation material.
	4. Ongoing PhD, "The role of religious narratives in use in the radicalisation of British Muslims"; Zaf Shah. (current map).	This study focuses on Islamist narratives and their relevance to the radicalisation of British Muslims. It aims to understand the factors and motivations that underpin the norms and behaviour of a violent Islamist. The focus includes comprehending the root of religious narratives and the mechanisms through which truth is constructed and deconstructed in their belief system. The study will be beneficial to academics, front line counter terrorism practitioners and the community, helping develop a counter narrative.
	5. Completed PhD, "How did the UK Government's decision to include Right Wing Extremism within its CT "Prevent" Strategy impact on local responses to the English Defence League (EDL)?"; University of Kent	This thesis will explore the ways in which the UK authorities, acting on behalf of the State, respond to the street-based protest movement, The English Defence League (EDL), with particular focus on the applicability of the Counter Terrorism "Prevent" Strategy. Right Wing Extremism (RWE) has steadily gained prominence in the UK since the inception of the EDL in 2009, a group born from the response of local Luton residents to Islamist Extremist marches and demonstrations in the area. This thesis aims to bridge this gap in our understanding and to add value to both policy making in this area, as well as the wider field of study into right wing extremism in the UK, with implications for the international community.

		6. Completed PhD, "Examining the predictive factors of violent extremist attitudes among communities with varying levels of cohesiveness"; Saskia Ryan (completed). http://eprints.hud.ac.uk/id/eprint/34832/1/Ryan%20THESIS.pdf	The study seeks to investigate the role of the social environment around an individual as they themselves understand it alongside their beliefs and attitudes. Two of the main strategies currently adopted involve increasing resilience and building cohesive communities. With research showing that resilience should not be viewed as a single concept, and community can no longer be simply viewed as a spatial geographical area, there is a clear need to develop new strategies that take such findings and contextual changes into account.
		7. Completed work/prof: "Transformation of police learning and development"; Prof Jean Hartley (completed).	This project seeks to tackle the problem of 'virtual extremism' by using virtual technology to promote social inclusion and tolerance. There is widespread agreement among policy makers that getting ahead of extremist use of new technology is vital. Developing a ground-breaking virtual reality technology educational resources for tacking hate and extremism head on - simultaneously reducing its influence in real life communities and lessening its appeal as a potential hi-tech recruitment method. In particular we would pilot this technology and make it available to schools and the wider public as an open access educational resource.
		8. Completed work/prof: "Police use of community intelligence"; Dr. Colin Roberts. (completed).	TARDIS is a trans-national project with the overall aim of ensuring that public bodies actively discourage disaffection of individuals and communities by gaining a complete understanding of the concerns or different community groups and individuals within those groups.

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	Other Sources	
	Completed Research: Avis, W. (2020). *The COVID-19 pandemic and response on violent extremist recruitment and radicalization*: https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/15322/808_COVID-19%2 0_and_Violent_Extremism.pdf?sequence=1&is Allowed=y	A number of drivers of radicalisation have been identified, it is important to note that these are contested, subject to much debate and require interrogation when assessed in different contexts. These include, though are not limited to: • Historical grievances and the role of authoritarianism • Political climate • Governance • Socio-economic factors • Marginalisation of young people • International events, funding and the role of migrants • Radicalisation in prisons • Inter-group/religious rivalries These drivers operate differently across individuals and communities and may intersect. It is important to note that the COVID-19 pandemic and responses to it may amplify some of these drivers acting as an additive factor. Commentary from a number of contexts suggests that the impact of COVID-19 on radicalisation will play out differently over short, medium and long-time frames.
	Completed research: University of Sussex (2016). *Policing Hate Crime: Modernising the craft, an evidence-based approach. Measuring hateful activity on Twitter.* http://library.college.police.uk/docs/PKF1/13_0 02.pdf	This document outlines the steps taken by the Centre for the Analysis of Social Media to measure and characterise hate speech sent on Twitter over the period of a year, from March 2016 to March 2017, focusing on anti-Islamic and Antisemitic speech shared on the platform. It describes the methodological steps taken to collect and analyse this data and outlines a number or key findings generated during the investigation.

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	Completed Research: Commission for Countering Extremism (2020). *COVID-19: How hateful extremists are exploiting the pandemic:* https://assets.publishing.service.gov.uk/govern ment/uploads/system/uploads/attachment_data /file/898925/CCE_Briefing_Note_001.pdf	Government needs to include clear plans to counter extremism in their response to this and future crises. It should also publish a new counterextremism strategy urgently to ensure that it can strategically respond to the activities of extremists in our country. This strategy should include: • An assessment of how extremism manifests locally, the harm it causes, the scale of support for extremist narratives and how best to pre-empt extremist activity. This should also include a mechanism to provide bespoke support to local authorities most affected. • An assessment of who is most susceptible to extremist narratives and a plan of what interventions they will put in place to engage and support those people. • Plans to work with researchers and practitioners to build a better understanding of 'what works' in relation to counter extremism online and offline. • A commitment to ensure hateful extremism falls within the remit of the new online harms regulator and that existing laws on inciting hatred should be enforceable online. • Plans to build an understanding of how conspiracy theories contribute to extremism. Including how they are utilised by extremists, what the scale, impact and harm is, and how to counter them. This should include a commitment to develop a system to classify dangerous conspiracy theories based on the harm they cause. • Separately, the Ministry of Housing, Communities and Local Government must drive forward a COVID-19 cohesion strategy to help bring different communities together to prevent extremist narratives from having significant reach and influence.
12. Supporting integration of services around rehabilitation and prevention of reoffending	None found	None found
13. Understanding the contribution of	**Research Map**	

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forensic techniques to the Criminal Justice System, within investigations and in court, including issues such as attrition of cases in the system	1. Possibly completed PhD "Composition and survival of latent fingerprints"; Prof Keith Rogers (current map).	This research project will examine the chemical components of latent prints, produce a synthetic biochemical simulant and use this to examine component interactions and, in particular, survivability in response to environmental stimuli.
	2. Possibly completed PhD "The quantification of forces involved in stabbings"; Prof Guy Rutty (current map).	Following a stabbing, pathologists are often asked to provide an estimation of the force involved. Currently this is done using qualitative methods. This work aims to provide quantitative data of the forces involved in a stabbing.
	3. Possibly completed PhD "The aetiological basis of subdural haematoma infant trauma"; Prof Guy Rutty (current map).	This study will consider alternative hypotheses for the source of bleeding related to infant subdural haematoma (SDH). The research will focus on the anatomy of the dura mater, a membrane that has a very rich and intricate vasculature, a fact not often alluded to in the SDH literature. The aim of this area of work is ultimately to aid health, law enforcement and legal professionals in the correct recognition of cases of abusive infant head injury, based on detailed scientific study and not on unproven theory.
	4. Possibly completed PhD, "Role of post-mortem computed tomography in forensic and medico-legal autopsies"; Prof Guy Rutty (current map).	This project considers the role of post-mortem computed tomography (PMCT) in medico-legal and forensic autopsies. It looks at how imaging can enhance police investigations and enhance evidence giving in court and may one day remove the need for autopsies.
	5. Possibly completed PhD "Forensic science at the interface between chemistry and physical ergonomics"; Beth McMurchie (current map).	The aim of this research is to use the combined physical characteristics of the distal phalanx to demonstrate if a relationship exists between them and the height or weight of an individual. If a significant correlation is found, it could be developed into a low-cost, fast and effective biometric method for the police and other identification services to obtain an initial description of an individual.

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	6. Ongoing PhD "The use of Post Mortem Computed Tomography (PMCT) in the Identification of adult humans"; Prof Guy Rutty (current map)	This research aims to determine the extent of the role of Post Mortem Computed Tomography (PMCT) for identification, through the analysis of a database of known deceased adults. It will attempt to establish the extent to which PMCT can provide an adjunct or alternative to current methods of human adult identification (which may involve de-fleshing of bones) and investigate novel approaches to identification facilitated by PMCT. The output of this research has the ability to change autopsy practice and benefit the public globally through an accelerated, cost-effective non-invasive, safer approach to human cadaveric identification.
	7. Ongoing work/prof: "British Academy Grant: Digital forensics in UK policing - an ethnographic investigation of a rapidly-developing forensic domain"; Dana Wilson-Kovacs (current map).	This exploratory study adopts an empirically based approach to provide a sociological examination of the development of digital forensics in four English police forces and examine the opportunities and challenges this politically sensitive field is currently facing.
	8. Ongoing work/prof: "Dr Marcin Budka. Dinosaurs to forensic science: Digital tracks and Traces (DigTrace)"; Prof Matthew Bennett, (current map).	Footprints are the neglected 'Cinderella' evidence of the crime scene, especially as time pressures of Crime Scene Investigators (CSIs) grows. This study addresses this by placing a simple tool for the 3D analysis of footwear evidence in the hands of every CSI officer. The research team at Bournemouth have fused computer and earth sciences to translate academic research on fossil footprints into freeware for use by police forces and forensic services across the UK.
	9. Ongoing work/prof: "Homicide Investigation and Forensic Science (HIFS) Project"; Professor Fiona Brookman (current map).	This research aims to provide an in-depth understanding of how routine and cutting edge forensic science practice contributes to the police investigation of homicide in Britain, exploring the decisions made around these technologies and how the results obtained are used by investigators to develop intelligence and evidence.

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	10. Ongoing PhD: "Written threat analysis"; Jim Shaw (current map).	The subject of written threats has not been subjected to a forensic analysis from a multi-dimensional point of view, nor has it been examined for individual style within such a framework. The benefits of this could include an ability to detect sociolinguistic patterns - such as relative dating (particularly in relation to multiple threats), age profiling, location detection (in respect of areas of origin), social strata, gender, and authorship analysis (AUA) itself. The research could be of immense forensic potential for its use as a law enforcement tool, either as an intelligence asset, of evidential value, or both
	11. Ongoing PhD: "A consistent victim journey, or is it?" An exploration of police response to rape investigation using a mixed method approach" Carolyn Lovell (current map).	This research explores the perception of the issues purporting to rape in a policing context. Why does rape remain under reported and why is the attrition rate of these crimes so high? The overall aim of this research is to improve local police response to rape.
	12. Ongoing PhD: "An experimental analysis of the use of digital crime scene footwear capture methods compared to traditional manual alternatives."; Julie Henderson (current map).	This PhD will examine innovative technology designed to digitise the capture of crime scene footwear evidence in comparison with the current manual handling process. The ultimate aim is to establish whether or not it is possible to digitally compare the two samples and provide evidence sufficient for prosecution in a more efficient, effective way.
	13. Ongoing work/prof: "A validation framework for forensics and surveillance biometric technology use" Dr Matthias Wienroth (current map).	The current approach to the validation of forensic and surveillance technologies for practice focuses strongly on their techno-scientific aspects, often neglecting tests of compatibility with policing and societal values. This project aims to provide the outline of a more comprehensive social framework for the validation of forensic and surveillance technologies.
	14. Ongoing work/prof: "Improving strangulation diagnoses using micro-CT" Professor Mark Williams, Waltraud Baier (Current map).	Strangulation deaths are complicated to diagnose in forensic pathology practice as the injuries encountered can be very subtle or not pathognomonic to strangulations. Using high-resolution scanning of the

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		victims' neck structures, which can contain micro-fractures, provides another source of evidence to increase the pathologists' confidence in the complete base of evidence.
	15. Ongoing PhD: "Use of 3D image processing techniques to create a reference repository for the characterisation and analysis of sharp force injuries on bone"; Professor Mark Williams, Kirsty Alsop (current map)	Sharp force trauma is the most common method of homicide in the UK. Forensic pathologists may conduct evaluation of trauma in an attempt to determine the weapon used in these cases. However, currently there is no consistent methodology that can be implemented to these forms of evidence. This research aims to provide a validated empirical methodology, using 3D imaging techniques, to be applied by police forces and pathologists to analyse sharp force trauma. This study also intends to produce a toolmark database to aid in police casework.
	16. Ongoing PhD: "An investigation into 3D printing of osteological remains: the metrology and ethics of virtual anthropology"; Rachael Carew (current map).	Validation of 3D printing human remains for use in court through empirical research could be beneficial to the other forensic disciplines, such as fingerprinting and crime scene reconstruction, and could also impact on wider academic communities.
	17. Completed PhD "The application of 3D digitising in the forensic anthropological context"; Dave Errickson (completed). https://www.sciencedirect.com/science/article/abs/pii/S2212478014000719	Osteological evidence cannot be taken into the courtroom due to its sensitive nature. Therefore, photographic images are used as a proxy to reduce the impact of such traumatic scenes. Although three-dimensional (3D) digitizing is currently being utilized in a range of disciplines, there are no standard practice guidelines that apply to the forensic sciences. This research aims to apply 3D digitizing in forensic anthropological evidence.
	18. Completed work/prof "Recovery of impression evidence using a 3D structured light scanner" Paul Norris (completed). https://www.sciencedirect.com/science/article/abs/pii/S1355030618300261?via%3Dihub	The aim of this research is to look at using a 3D structured light scanner to recover impression evidence from the crime scene. Some of the perceived benefits of using this technology would be that the evidence would be recovered in a non-contact manner, so poses no threat to the evidence during the recovery process. Also, the acquisition of the evidence will be much quicker than using traditional casting methods and there are fewer health and safety risks.

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	Other Sources	
	Completed Research: Tun, T. et al (2016). *Verifiable limited disclosure: reporting and handling digital evidence in police investigations*: http://library.college.police.uk/docs/PKF1/01_02 2.pdf	This paper defines and illustrates the key challenges of accessing digital evidence, and proposes the concept of verifiable limited disclosure, which defines a communication protocol to ensure privacy, continuity and integrity of digital evidence. More specifically, the protocol allows (i) citizens to decide what evidence to disclose to law enforcement agencies and (ii) any of the two parties to be able to prove any tampering of the disclosed evidence. This paper discusses methods for implementing the communication protocol using standard security and privacy tools and presents a pathway to evaluating their effectiveness.
	Completed Research: Pike, G. et al (2017). *Improving investigations through utilising technology, community and psychology: Engaging with Social Media and Citizen Enquiry*: http://library.college.police.uk/docs/PKF1/01_03 0.pdf	Overall, the current projects suggest that the public are increasingly unhappy with police use of social media. Importantly the public wish to use social media to report crime and communicate directly, yet police forces/agencies tend to see it as one-way, informal communication. At present, there is limited dialogic interaction between the police and the community on Facebook sites, meaning that new media are still being used like old media (i.e. just to release news, not to have a conversation). Police are unaware of existing guidelines on obtaining evidence from witnesses who have used social media prior to the formal investigation. Witnesses who use social media to conduct citizen enquiries prior to formal investigation are likely to contaminate their memory of the crime, and will identify an innocent suspect in a formal identification procedure if they have seen them before in social media.

| | | Completed Research: Butterfield et al (2018). *Automated Digital Forensics*: http://eprints.leedsbeckett.ac.uk/5073/1/Automated%20Digital%20Forensics.pdf | Due to the excessive nature of data submitted for analysis, it is no longer practical for Digital Forensic Units to sit and examine every bit of data found on an exhibit. The use of an ontological approach as designed within this project has been shown to allow the identification of core forensic artefacts that collaborate between exhibits and cases. The key knowledge generated is identifying the suitability of the use of ontologies within forensics to produce a standardised format for storing data extracted from digital evidence. It has been shown that parsers can be created to obtain data in accessible formats from some of the key forensic tools used by the force. These also have the extra potential impact of additional future coding to allow automated reports to be generated as part of the police's Streamlined Forensic Reporting process. |
| | | Completed Research: Lambourne, A. et al. (2018). *Software Pilot and User Guide EWT: Chat Log Grooming Detection*: http://eprints.leedsbeckett.ac.uk/5078/7/Software%20Pilot%20and%20User%20Guide%20EWT%20-%20Chat%20Log%20Grooming%20Detection.p df | The aim of this work is the creation of tools and techniques to detect and flag evidence of predatory behaviour by scanning chat and other social media logs extracted from seized equipment. Although the research literature proposes techniques for modelling and detecting "luring" dialogues, Digital Forensics Units (DFU) typically rely on manual review, searching, and simple keyword lists. Based on analysis of this information and the associated academic papers, a series of predatory speech acts are identified as being relevant to the automated detection of grooming. The result is a software tool that can be used by investigators to automate log-file screening to quickly filter through chat logs to identify evidence. The approach is sufficiently generic to allow the same tool to be used with different lexicons to detect other dialogues of concern such as e-stalking and radicalisation or terrorist recruitment. |

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	Completed Research: Dixon, M. et al (2018). *DigiVisor Mobile App: Frontline Officer Awareness Development and Decision Support*: http://eprints.leedsbeckett.ac.uk/5075/6/DigiVisor%20Mobile%20App%20-%20Frontline%20Officer%20Awareness%20Development%20and%20Decision%20Support.pdf	The study uncovered issues with the accuracy and level of confidence of frontline officers to perform seizure of digital devices from properties. A user-centred design approach was utilised in this project to develop an application which would aid frontline officers in the seizure of digital devices. The output resources for the project include a mobile based app that was designed and implemented for the Android mobile phone operating system
	Completed Research: Schreuders, Z. et al (2018) *Needs Assessment of Cybercrime and Digital Evidence in a UK Police Force:* http://eprints.leedsbeckett.ac.uk/5076/1/Needs%20Assessment%20of%20Cybercrime%20and%20Digital%20Evidence%20in%20a%20UK%20Police%20Force.pdf	Cybercrime has recently surpassed all other forms of crime in the United Kingdom and has been acknowledged as a national priority. The purpose of this research is to analyse the cyber-investigation lifecycle: from the experience of the public when reporting cybercrime to call takers, through to the attending officers, officer(s) in charge, and the many units and roles involved in supporting cybercrime investigations. A large-scale needs assessment was conducted within one of the largest police forces in England and Wales, involving focus groups and interviews with police staff and strategic leads across key units and roles. The results of the needs assessment document the current state of policing cybercrime in a UK police force, along with the improvements and needs that exist across the force and in specific units and roles.
15. Understanding which individuals are at risk of becoming offenders (and/or victims), for what reason and at what stages of their lives	**Research Map** 1. Ongoing work/prof: "Evaluating the Metropolitan Police Service's DIVERT intervention which supports young people who have been in police custody"; College of Policing (current map).	The intervention focuses on intervening with young people who have been taken into police custody. Trained Custody Intervention Coaches work on a one-to-one basis with young people, supporting them back into education, training, employment, or in gaining access to other services. Support is provided outside the criminal justice process.
	2. Ongoing work/prof: "Evaluating the Think Family Early Intervention programme"; College of Policing (current map).	Evaluating the Think Family Early Intervention programme that involves allocating Police Community Support Officers and Police Constables to support families. Families are selected

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		based on their experience of multiple challenges, which may include crime, anti-social behaviour, truancy, unemployment, mental health and domestic abuse. Families are signposted to key workers, school workers and council agencies. The ultimate aim is to prevent early warnings escalating into an intergenerational cycle of offending, and to reduce demand from these families on public services.
	3. Ongoing work/prof: "Evaluating Operation Divan: An intervention targeting young people believed to be in possession of a knife or other weapon" College of Policing (current map).	The research project will evaluate the implementation of Operation Divan in North Yorkshire and the Metropolitan Police Service. It will also explore the impact of the intervention on preventing the criminalisation of young people, keeping young people safe and prompting a culture change around knife carrying. A cost-analysis will be carried out to identify associated costs in delivering the intervention.
	4. Ongoing work/prof: "Recognising and responding to vulnerability-related risks" College of Policing (current map).	This guideline will focus on vulnerability and risk by creating a safe, trusting environment and by forces supporting frontline staff to recognise and respond to vulnerability. This work will also explore the role of the police service and other agencies in responding to vulnerability related risk
	5. Completed work/prof: "Evaluation of Hull Adult Female Triage Scheme.", Ian Brennan (completed). http://library.college.police.uk/docs/Police-Female-Triage-Report-Hull-University-2015.pdf	The aims of this scheme are to reduce the potential for reoffending through early identification of risk; divert female offenders away from the criminal justice system by providing alternative, proportionate, effective and targeted alternatives; increase community confidence in the criminal justice system through greater involvement of victims and witnesses and use of restorative justice; to empower and support female adult offenders to take responsibility for the management of their risk of offending.

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	6. Completed work/prof: "What Works Centre for Crime Reduction: Commissioned Partnership Programme - WORK PACKAGE 2 - Mediation, mentoring and peer-support to reduce youth knife and gun-enabled violence: a systematic review"; Dr Phil Edwards (completed). http://library.college.police.uk/HeritageScripts/Hapi.dll/relatedsearch?SearchTerm=~[!E1695]~&PlainTerm=E1695&Dispfmt=F	This systematic review will provide a comprehensive account of the range of violence prevention programmes for young people who have either been involved in, or are identified as being at high-risk of youth knife or gun-enabled (weapon-based) violence, and that have included one or more components of: mediation, mentoring, or peer support.
	Other Sources Completed Research: College of Policing (2012). *Factors associated with serious or persistent violent offending: Findings from a rapid evidence assessment.*	Identification of serially violent individuals by the police could allow forces to be aware of and, where possible develop strategies to manage the risk to the public. This paper presents findings from a Rapid Evidence Assessment (REA) designed to explore the evidence base on factors associated with, or predictive of, known serious or persistent violent offending excluding domestic or sexual violence. An offending career that
	https://whatworks.college.police.uk/Research/Documents/REA_violent_reoffending.pdf	begins before the age of 14 is highly predictive of later violent offending and a longer criminal career (reported in 9 studies of which 4 were graded 1). • Individuals with a long criminal career are more likely to commit violent crimes (reported in 7 studies of which 5 were graded 1). • Individuals with a history of violence are more likely to commit further violent crimes (reported in 10 studies of which 5 were graded 1).

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	Completed Research: Del Toro, J., Lloyd, T., Buchanan, K.S., Joi Robins, S., Zhang Bencharit, L., Gamson Smiedt, M., Reddy, S.J., Rodriguez Pouget, E., Kerrison, E.M. and Atiba Goff, P. (2019) '*The criminogenic and psychological effects of police stops on adolescent black and Latino boys*', National Academy of Science USA, 116(17), 8261-8268. https://europepmc.org/article/med/30962370	Proactive policing, the strategic targeting of people or places to prevent crimes, is a well-studied tactic that is ubiquitous in modern law enforcement. A 2017 National Academies of Sciences report reviewed existing literature, entrenched in deterrence theory, and found evidence that proactive policing strategies can reduce crime. The existing literature, however, does not explore what the short and long-term effects of police contact are for young people who are subjected to high rates of contact with law enforcement as a result of proactive policing. Using four waves of longitudinal survey data from a sample of predominantly black and Latino boys in ninth and tenth grades, we find that adolescent boys who are stopped by police report more frequent engagement in delinquent behaviour 6, 12, and 18 months later, independent of prior delinquency, a finding that is consistent with labelling and life course theories. We also find that psychological distress partially mediates this relationship, consistent with the often stated, but rarely measured, mechanism for adolescent criminality hypothesized by general strain theory. These findings advance the scientific understanding of crime and adolescent development while also raising policy questions about the efficacy of routine police stops of black and Latino youth. Police stops predict decrements in adolescents' psychological well-being and may unintentionally increase their engagement in criminal behaviour.
16. Public protection: the public are protected from harm caused by offenders (MoJ)	**Research Map** 1. Possibly completed work/prof: "Understanding and improving risk assessment on domestic violence cases using machine learning tools" Juanjo Medina (current map).	This project contributes to the much-needed evidence base on domestic violence in an attempt to improve prevention of this social problem. The project is particularly interested in developing knowledge to improve the current risk assessment tools used by the police.
	2. Possibly completed PhD: "Proposal to design 'missing persons' harm mapping model"; Joe Apps (current map).	Using an index of missing harm to provide an alternative method of analysing missing persons' episodes should enable a move away from volumes and percentages of missing persons. This research

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		looks at using a harm index for a more sophisticated approach to prevent and protect strategies.
	3. Ongoing PhD: "Journey from policy to practice – Local implementation of the 'Ending Violence Against Women and Girls' (VAWG) national domestic abuse strategy" Andrea Kilvington (current map).	This study researches the process from Ending Violence Against Women and Girls (VAWG) domestic abuse policy development through to local area application, implementation and front-line practice.
	4. Ongoing work/prof: "Domestic abuse ethnographic study"; College of Policing (current map).	This study is an in-depth exploration of police response to domestic abuse. It will examine police officers' understanding of and attitudes towards domestic abuse. It will also examine policies and processes, the interactions between officers' attitudes and understanding and the processes they work with, and wider organisational contexts such as performance frameworks and resourcing. This research will provide a rich understanding of officer and staff experiences of responding to domestic abuse and will identify barriers and facilitators to providing an effective response. It will help to understand how the College can better support forces in this area.
	5. Ongoing PhD: "Assessing the risk in domestic abuse: towards the development of an operationally useful domestic abuse risk assessment tool" Paul Hargreaves (current map).	The key aim of the research is to empirically validate the policing response to domestic abuse and develop a framework that is operationally useful to those front-line officers dealing with domestic abuse.
	6. Ongoing PhD: "Evaluating how to improve confidence in reporting of sexual offences"; Eli Sarvari (current map).	An increasing emphasis has been placed on creating a 'victim focused' Criminal Justice Service in the United Kingdom to ensure victim-survivors can overcome their traumatic experiences and achieve justice. This research could positively impact the number of victims who feel supported and able to report crimes of sexual offences and inform best practice for victims.

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		7. Possibly completed PhD "Proposal to design 'missing persons' harm mapping model"; Joe Apps (current map).	Theories around crime mapping have recently been extended to include crime harm mapping work by Sherman, Neyroud and Neyroud. Their work, in the design of the Cambridge Crime Harm Index, uses sentencing guidelines to weight crime in order of harm to individuals, communities and society. Using an index of missing harm could provide an alternative method of analysing missing persons' episodes and should enable a move away from volumes and percentages of missing persons. Using a harm index could lead to a more sophisticated approach to prevent and protect strategies.
		8. Ongoing work/prof: "Recognising and responding to vulnerability-related risks."; College of Policing (current map).	This guideline will focus on vulnerability and risk by creating a safe, trusting environment and by forces supporting frontline staff to recognise and respond to vulnerability. This work will also explore the role of the police service and other agencies in responding to vulnerability related risk.
		9. Ongoing work/prof: "Domestic abuse: Responding to the shadow pandemic", Prof Sandra Walklate (current map)	Domestic violence is a severe problem in the UK, but the social isolation regulations imposed in March 2020 have exacerbated dangers ("a perfect storm for controlling, violent behaviour behind closed doors"). Media coverage has intimated the likely impact of the 'stay at home' directive on the nature and extent of domestic abuse. Evidence suggests that this has already taken its toll on the rates of intimate partner homicide, and that the number of assaults and murders will continue to rise considerably this year. The research team, which consists of experienced experts in the field, will work together with CJS partners to produce fast-delivery reports in order to facilitate shared good practice in the social isolation period and its immediate aftermath; and explore longer-term trends which emerge in the next eighteen months.

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	10. Completed PhD: "In the Public Interest? Evaluating the management of juvenile covert human intelligence sources in England & Wales and the juxtaposition with current child protection orthodoxy"; Brian Chappell (completed).	The aim of this research is to provide critical examination of law enforcement agencies' utilisation of covert policing powers under United Kingdom legislation to prevent crime and disorder. These powers, when used effectively, are recognised as being able to influence harm reduction strategies. This is particularly relevant to the priorities of the government; controlling the rise of gangs, youth violence and to cut crime.
	Toolkit **Release on temporary license** Cheliotis, L. K. (2008) 'Reconsidering the effectiveness of temporary release: A systematic review', Aggression and Violent Behaviour, 8, 153-168	Temporary release from prison, also known as release on temporary license, allows offenders a short period of absence from a correctional establishment. This usually occurs towards the end of their sentence or when they are due for probation. There is some evidence that the intervention has reduced crime, but overall the intervention has not had a statistically significant effect on crime.
	Electronic tagging: General offences Belur, J., Thornton, A., Tompson, L., Manning, M., Sidebottom, A. and Bowers, K. (2017) A Systematic Review of the Effectiveness of the Electronic Monitoring of Offenders, What Works Centre for Crime Reduction, University College London	Electronic monitoring (EM) of offenders involves placing a tag around the ankle or wrist of an offender which, in combination with a receiving device, can verify their whereabouts at specified times. This allows the monitoring and enforcement of curfews between specific times or in specific locations, meaning the offender can be released into the community rather than serving time in a correctional institution. Meta- analysis showed there is some evidence that electronic monitoring has either increased or decreased crime, but overall it has not had a statistically significant effect on crime.
	Electronic tagging: Sex offences Belur, J., Thornton, A., Tompson, L., Manning, M., Sidebottom, A. and Bowers, K. (2017) A Systematic Review of the Effectiveness of the Electronic Monitoring of Offenders, What Works	Overall, the evidence suggests that the intervention has reduced reoffending. The meta-analysis showed that electronic monitoring of sex offenders led to a statistically significant decrease in reoffending compared to control groups who did not have EM.

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		Centre for Crime Reduction, University College London	
		Prison education Davis, L. M., Bozick, R., Steele, J. L., Saunders, J. and Miles, J. N. V. (2013) 'Evaluating the Effectiveness of Correctional Education A Metanalysis of Programs That Provide Education to Incarcerated Adults', RAND corporation report, available at http://www.rand.org/pubs/research_reports/RR266.html Wilson, D. B., Gallagher, C. A. and MacKenzie, D. L. (2000) 'A meta-analysis of corrections based education, vocation and work programs for adult offenders', Journal of Research in Crime and Delinquency, 37:4, 347-368	Education and skills training programmes in correctional facilities aim to increase the education or skills levels of participants to improve their employment prospects on release. Meta-analysis showed overall, the evidence suggests that educational and skills training programmes in correctional facilities have reduced reoffending, but there is some evidence (from two studies) that they have increased reoffending.
		Prison visits M.M., Mitchell, K., Spooner, D., Jia, Y., Zhang. 2106. The effect of prison visitation on re-entry success: A meta-analysis. Journal of Criminal Justice, 47, pp. 74–83.	Prison visits provide prisoners with an opportunity to preserve or develop connections with family, friends, community and social support networks. By encouraging, maintaining or strengthening such networks, these visits may provide protective mechanisms that function to prevent criminal relapse after release from prison. Meta-analysis showed overall, the evidence suggests that prison visits have reduced crime, but there is some evidence that they have increased crime.

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	Psychological treatment for adults convicted of child sexual abuse Grønnerød, C., Grønnerød, J. S. & Grøndahl, P. (2015) Psychological Treatment of Sexual Offenders Against Children: A Meta-Analytic Review of Treatment Outcome Studies, Trauma, Violence & Abuse Vol.16(3), 280-290	Psychotherapeutic treatment of adults who have been sentenced for sexual offences against children. The review evaluated the effect of short-term Cognitive Behavioural Therapy (CBT) programmes. There is some evidence that the intervention has either increased or reduced crime, but the meta-analysis did not detect an overall statistically significant effect of psychological treatment for sex offenders on subsequent incidences of arrest or conviction.
	Restorative justice Strang, H., Sherman, L.W., Mayo-Wilson, E., Woods, D. and Ariel, B. (2013) 'Restorative Justice Conferencing (RJC) Using Face-to-Face Meetings of Offenders and Victims: Effects on Offender Recidivism and Victim Satisfaction. A Systematic Review', Campbell Systematic Reviews, 2013:12 DOI: 10.4073/csr.2013.12 Livingstone, N., Macdonald, G. and Carr, N. (2013) 'Restorative justice conferencing for reducing recidivism in young offenders (aged 7 to 21)', Cochrane Database of Systematic Reviews, 2013, Issue 2. Art. No.: CD008898. DOI: 10.1002/14651858.CD008898.pub2	A Restorative Justice (RJ) conference is a planned face-to-face meeting between a victim and the offender(s) who have committed a crime against that person. Overall, the evidence suggests that RJ conferencing has reduced crime. The overall evidence is taken from Review 1 (based on 10 studies), which covers results from the USA, UK and Australia. When analysing the overall effect size, the review found that the offenders who participated in RJ conferences were significantly less likely to reoffend over 2 years than those who did not participate. The percentage differences associated with the 10 studies range from 7% to 45% fewer repeat convictions or arrests.

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	Other Sources Ongoing Research: Kirchmaier, T. *Outreach to domestic abuse victims in times of quarantine*	Police reports suggest that domestic abuse (DA) has risen as a result of the pandemic, yet there is concern that the share of DA incidents reported may have fallen. When a victim and abuser are quarantined together, calling the police may jeopardize the victim's safety. As a result, greater numbers of victims are increasingly isolated and at risk. So how can victims get help? How can authorities let them know what options are available? Direct messaging can be dangerous, since texts from the police may provoke a controlling abuser. We propose a targeted social media campaign to inform potential high-risk victims about the Silent Solution, a safer option for contacting police. Our approach leverages the wide use of social media, which also poses less risk than direct messaging. Whereas text messages are actively sent, social media adverts are passively received. The study will identify potential high-risk victims and randomly select half for the media campaign. Analysis of DA calls will show whether the approach is effective. If so, it will provide an approach for reaching isolated DA victims, and for giving them options to get help, that will be of value both during quarantine and beyond.

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	Completed research: Campbell, A. (2020). *An increasing risk of family violence during the COVID-19 pandemic: Strengthening community collaborations to save lives:* https://www.sciencedirect.com/science/article/pii/S2665910720300384?via%3Dihub	Though necessary to slow the spread of the novel Coronavirus (COVID-19), actions such as social-distancing, sheltering in-place, restricted travel, and closures of key community foundations are likely to dramatically increase the risk for family violence around the globe. In fact, many countries are already indicating a dramatic increase in reported cases of domestic violence. While no clear precedent for the current crisis exists in academic literature, exploring the impact of natural disasters on family violence reports may provide important insight for family violence victim serving professionals. Improving collaborations between human welfare and animal welfare agencies, expanding community partnerships, and informing the public of the great importance of reporting any concerns of abuse are all critical at this time.
	Completed research: Kaukinen, C. (2020). *When Stay-at-Home Orders Leave Victims Unsafe at Home: Exploring the Risk and Consequences of Intimate Partner Violence during the COVID-19 Pandemic.* https://link.springer.com/content/pdf/10.1007/s12103-020-09533-5.pdf	Methods by which domestic abuse victims seek help for offences committed against them will change – in terms of how they access support
	Completed Research: Parks, A et al. (2020). *Illegal Online Sexual Behavior During the COVID-19 Pandemic: A Call for Action Based on Experiences from the Ongoing Prevent It Research Study:* https://link.springer.com/content/pdf/10.1007/s10508-020-01750-7.pdf	"Prevent It" is an anonymous internet-based cognitive behavioural therapy (CBT) intervention which is being tested in a blinded randomized clinical trial design to see whether it is effective in decreasing consumption of Child Sexual Abuse Material. Research into the effectiveness of this approach is ongoing
	Completed Research: Allnock, D. (undated). *Why might some young people be reluctant to disclose CSE? What the police can do to*	It is recommended that the police respond sensitively to young people where Child Sexual Exploitation (CSE) is suspected or evidenced. It is important for the police to

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	respond? https://www.uobcsepolicinghub.org.uk/assets/do cuments/Responding-to-YP-who-disclose-CSEpractice-briefing.pdf	recognise that it may take time to gain a child or young person's trust, but there are things that young people tell us will help to build that trust
	Completed Research: Firmin, C. (undated). *Child Sexual Exploitation and the Victim Perpetrator Overlap*: https://www.uobcsepolicinghub.org.uk/assets/do cuments/Vic-perp-overlap-briefing-Final.pdf	What can the police do when engaging with a young person who has been both victimised and victimised others: always avoid trying to put young people into either a victim or perpetrator category. If a young person discloses their own involvement in offending and/or abusive behaviours during an interview or other form of contact with the police, this should not be seen as undermining their experiences of victimization. If a young person is identified for their offending first, it is always important that the police make a social care referral.
	Completed Research: College of Policing (2017). *Domestic Abuse Matters 2.0: Evaluation of First Responder Training*. https://whatworks.college.police.uk/Research/Do cuments/Domestic_Abuse_Matters_2.0.pdf	Findings from an evaluation of the first iteration of the Domestic Abuse Matters training showed positive impacts on some indicators of officer knowledge and understanding of coercive control, but not on others. The training was revised to be more interactive and to include established models and powerful body worn camera footage to help explain the dynamics and impact of coercive control. • There was a small positive impact of the second iteration of the training on measures of police officer knowledge of coercive control and attitudes to domestic abuse. • Positive impacts of the training on officer knowledge and attitudes were observed in both research sites – Humberside and Suffolk Police Forces – and effects were consistent across forces. • Respondent attitudes were already in some instances positive prior to the training. The most likely explanation for the statistically small improvements in attitudes is a lack of sensitivity in the measurement tool combined with 'ceiling' or 'floor' effects (extreme baseline scores that left little scope for positive change). Further evaluation work could develop and test a more reliable measure for officer knowledge of coercive control.

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20. Improved knowledge of the harms and impacts of serious organised crime, including economic impact	**Research Map** 1. Ongoing work/prof: "Threat, risk and harm: scoring of Organised Crime Groups (OCG)" Dr Paul Mulholland (current map).	This research looks at capturing information about active Organised Crime Groups (OCGs) in the UK. A scoring mechanism is used to translate the set of captured OCG features into a risk of harm assessment score. The risk of harm of each OCG can then be used to assist with the prioritization of police activity and strategic reporting. Findings will be used to recommend improvements to how OCGs are described (i.e. how data is captured) and how those descriptions can be used most effectively in order to calculate risk.
	2. Ongoing PhD: "The socio-legal construction of organised crime in Romania."; Alexandra Neag (current map).	When policing serious threats such as terrorism and organised crime, there is need for careful analysis of the benefits and pitfalls of transnational policy. The proposed project will explore how organised crime was constructed in post-communist Romania. This project could help understand how Romanian organised crime and corruption threaten the stability of Romania and, by extension, that of the European Union.
	3. Ongoing PhD "Investment of criminal proceeds into the legitimate economy: A comparative analysis of Russian and Italian organised crime in the UK real estate market"; Emanuele Sclafani (current map).	The purpose of this study is to compare investments of Russian organised crime with those of the Italian mafias in the UK real estate market in recent years/after Brexit. These criminal organisations have notable tendencies to be flexible and have high levels of organisation, which makes it difficult to investigate and counter them. They pose a serious threat to the economic and financial systems in all European countries, including the UK, because they often manifest themselves in the legal economy as economic business companies.
	4. Completed PhD: "In the Public Interest? Evaluating the management of juvenile covert human intelligence sources in England & Wales and the juxtaposition with current child protection orthodoxy."; Brian Chappell (completed).	The aim of this research is to provide critical examination of law enforcement agencies' utilisation of covert policing powers under United Kingdom legislation to prevent crime and disorder. These powers, when used effectively, are recognised as being able to influence harm reduction strategies. This is particularly relevant to the priorities of the government; controlling the rise of gangs, youth violence and to cut crime.

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	Toolkit	
	Targeting criminal assets to reduce crime	Asset-focussed interventions (AFIs) against organised crime are measures that target assets and finance deriving from crime or intended for use in a crime. They seek to deplete organised criminal finance and so reduce organised crime.
	Other Sources Completed Research: Global Initiative against Transnational Organized Crime (Mar 2020). *Crime and Contagion: The Impact of a pandemic on organized crime*: https://globalinitiative.net/wpcontent/uploads/2020/03/COVIDPB1rev.04.04.v1.pdf	Paper which outlines the impact of the virus on organized crime and recommended policy initiatives which to address these
21. Understanding how serious organized crime markets work, and how they interact with each other	1. Ongoing PhD "Police decision-making in tackling organised crime: Constructing and prioritising crime problems in the UK"; Maria Pournara (current map).	This research seeks to track and trace how national-level, strategic organised crime priorities have been defined by UK law enforcement agencies and how and why these have evolved and changed over time.
	2. Ongoing PhD: "Examining the use of business analysis techniques to police organised criminal networks"; Chris Allen (current map).	Organised criminals mimic the operation of sophisticated businesses –the only difference being the product they sell is illegal. On this basis, this research will apply established economic analysis techniques to these groups in order to enhance the development of policing strategies and tactics surrounding their disruption.
	3. Completed work/prof: "The facilitation of organised crime by professional enablers and money launderers"; Tiggey May (completed). https://eprints.bbk.ac.uk/29657/	Despite the growing recognition of the importance of professional enablers (e.g. lawyers, accountants and bankers) and money launderers to organised crime groups, very little is known about how such facilitators are groomed, recruited, retained and rewarded by organised crime groups (OCGs). Equally, little is known about the achievements and challenges faced by enforcement agencies and regulatory bodies when tackling the involvement of OCGs in organised fraud. This study examines the recruitment and routes into organised fraud and assesses the enforcement and regulatory

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		response, as well as exploring the preventative measures aimed at identifying, deterring and safeguarding those who facilitate/enable organised fraud.

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	Other Sources Completed Research: Europol (2020). Beyond the Pandemic*: How COVID-19 will shape the serious and organized crime landscape in the EU*: https://www.europol.europa.eu/publicationsdocuments/beyond-pandemic-how-covid-19-willshape-serious-and-organised-crime-landscapein-eu	Europol expects that the impact of the current crisis will unfold in three phases: • The current and immediate short-term outlook. • A mid-term phase which will become apparent over the upcoming weeks and months. • A long-term perspective. Criminals have been quick to seize opportunities during the COVID-19 pandemic to generate significant amounts of profit. Certain types of criminal activity intensified during the pandemic, while others almost ceased to occur. Even during times of crisis, criminal business continues. Much of the criminal activity related to the COVID-19 pandemic relates to cybercrime, the distribution of counterfeit and substandard goods, various frauds and scams as well as organised property crime among others. All of the criminal activities are typically carried out both by individual criminals as well as organised criminal groups (OCGs). These developments in serious and organised crime are not wholly unexpected and mirror the adaptability and flexibility of organised crime displayed in other crises. While intensive monitoring has provided us with a good picture of criminality during the immediate crisis today, some of the more far-reaching and longer-term impacts of the pandemic on serious and organised crime will not become apparent until later.

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| | Completed Research: Fortune, J., Johnson, J. & Bromley, J. (2017). *An application of systems thinking to the process used to collect, store and use information to fight organised crime.* http://library.college.police.uk/docs/PKF1/01_04 5.pdf | The Organised Crime Group Mapping (OCGM) Process is the operational way UK police forces collect and analyse intelligence and data on organised crime. This process has been analysed from a systems thinking and complexity perspective. At a workshop held in November 2016 police officers and other personnel from Merseyside Police created multiple cause diagrams and systems maps to investigate possible opportunities for improvement to the OCGM Process. This demonstrated that systems and complexity thinking can be used for this purpose. Analysis of the diagrams revealed a number of areas where improvements may be possible. Based on the results of this exercise we recommend a more comprehensive study as the basis for practical improvements to the OCGM Process at local and national levels. |

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