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THE
CREST CATALOGUE
SEPTEMBER 2017



CENTRE FOR RESEARCH AND
EVIDENCE ON SECURITY THREATS

CREST CATALOGUE

ABOUT

The Centre for Research and Evidence on Security Threats (CREST) is a national hub for understanding, countering and mitigating security threats.

CREST brings together the UK's foremost expertise in understanding the psychological and social drivers of the threat, the skills and technologies that enable its effective investigation, and the protective security measures that help counter the threat in the first place.

With the majority of its funding from the UK's security and intelligence agencies, it carries out its work within a context of significant stakeholder and international researcher engagement. This funding is administered by the Economic and Social Research Council, guaranteeing the academic rigour and independence of CREST's research.

CREST funds the work of over a hundred researchers, including doctoral students. It also brings together leading researchers from around the world. Working directly, or indirectly, on research that helps us understand, mitigate and counter security threats, this work is featured in the quarterly magazine, *CREST Security Review*. Through highlighting this work, regardless of funding source, CREST helps build the capacity of academic research in this area, whilst promoting and improving academic-practitioner dialogue and exchange.

This catalogue provides an overview of the published outputs from CREST's original research and syntheses. Other outputs, including blogs, videos and online resources are available from the CREST website at www.crestresearch.ac.uk

READ MORE

For more information about CREST, including blogs, videos and other resources, visit our website: www.crestresearch.ac.uk.

You can also keep up-to-date with our resources as and when we publish them by signing up to our newsletter at www.crestresearch.ac.uk/contact/newsletter/ and by following us on social media.



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CREST CATALOGUE

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UNDERSTANDING WHO & WHY

UNDERSTANDING WHO AND WHY

Who is involved in the transmission of violent ideologies? Why do people engage and disengage from violent extremism? How do groups innovate or restrict in their violent actions?

These projects seek to understand the actors, their beliefs, values and motivations, how they communicate their ideas to internal and external audiences.

PROJECTS

CORE PROJECTS

- Analysing the emotional appeal of extremist narratives
- Conspiracy theories and the far right
- Gender and violent extremism
- Grassroots counter messaging
- How do extremist groups and movements deploy symbols and communicate messages?
- Innovation and creativity in clandestine networks
- Kin and peer contexts, ideological transmission and the move to extremist involvement
- Refugees, social identity and resilience
- Risk assessment including criminogenic and psychological pathways to extremism
- The transmission of ideology

COMMISSIONED PROJECTS

- Conspiracy theories, their adoption, communication and risks
- Learning and unlearning terrorism in Northern Ireland
- Sikh radicalisation in Britain
- Soft facts and digital behavioural influencing
- Sri Lanka: When extremism gives way to moderate politics
- The internal brakes on violent escalation

GUIDES



SUNNI & SHI'A ISLAM: DIFFERENCES & RELATIONSHIPS

16-005-01

A guide setting out the fundamental differences

and similarities between Sunni and Shi'a Islam. Useful to help understand Islam as well as the tensions between these communities. Based on work by CREST researcher Professor Kim Knott.



CREST PRIMER: COUNTER JIHAD MOVEMENT

16-008-01

The Counter Jihad Movement is a loose international network with a shared ideology

that sees 'Islam' and 'the West' as being at war. Based on work by CREST researcher Dr Benjamin Lee, this guide gives an overview on the counter jihad ideology, the security implications and civic resistance, as well as the relationships between the different counter jihad groups.



ISLAM: THE FIVE PILLARS

16-007-01

Knowing something about the five pillars and their significance for Muslims isn't just important to correct misunderstandings about what Muslims believe, it is also important in the work environment and for good working relations. Based on work by CREST researcher Professor Kim Knott this guide explains the five pillars and what they entail.



GLOSSARY: ISLAMIC EXTREMIST MATERIAL

16-017-02

There are many concepts and phrases which are common to all Muslims, but which have a particular meaning for Islamic extremists. We have created a glossary to highlight the extremist interpretations of these, and to help people understand what is meant if they come across some of these phrases.

GUIDES



ISLAM: CONVERSION

16-024-01

Conversion to Islam is the process whereby a non-Muslim takes on a new religious identity, adopts new beliefs and practices, learns to live as a Muslim and gradually becomes accepted as one by others.

and practices, learns to live as a Muslim and gradually becomes accepted as one by others. This is a guide to the process of converting to Islam, why some people choose to convert, what they experience - good and bad - and whether they are likely to become extremists.



COUNTERING VIOLENT EXTREMISM

17-008-01

This guide details what CVE is, explores the broad landscape of CVE initiatives, what the CVE

programmes target, the range of methods used, who delivers the different intervention programmes, and an overall of what we do know from the evidence so far.

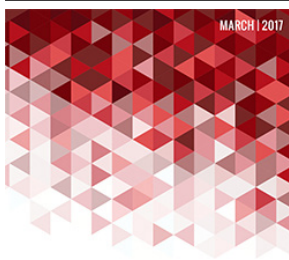


UNDERSTANDING THE FAR-RIGHT LANDSCAPE

17-001-01

Although the vast majority of far-right activists are non-violent, far-right activism has security implications in the UK and globally. Dr Benjamin Lee gives an introduction to the far-right in the UK, including an analysis of some of the groups and networks and the main security threats they present.

REPORTS



THE FAMILY AND IDEOLOGICAL TRANSMISSION

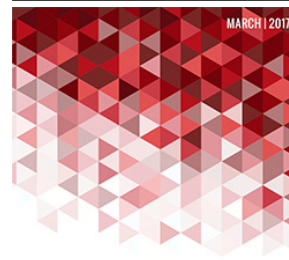
FULL REPORT

THE FAMILY AND IDEOLOGICAL TRANSMISSION
CREST REPORT
www.crestresearch.ac.uk



16-022-01

This CREST report is the first of a series of synthetic reviews on ideological transmission produced by Professor Kim Knott and Dr Benjamin Lee. It focuses on the family as a context for ideological transmission, and includes case studies on extremism and terrorism. The reviews bring together and summarise open source, social science research on ideological transmission.



THE FAMILY AND IDEOLOGICAL TRANSMISSION

EXECUTIVE SUMMARY

THE FAMILY AND IDEOLOGICAL TRANSMISSION
EXECUTIVE SUMMARY
CREST REPORT
www.crestresearch.ac.uk



16-023-01

This report synthesises arguments and findings from more than a hundred books and articles. It is divided into three principal sections, on the theoretical background, empirical approaches, and case studies on ideological transmission and families in the context of extremism and terrorism.



AFTER ISLAMIC STATE: UNDERSTANDING THE END OF THE CALIPHATE

WORKSHOP REPORT I

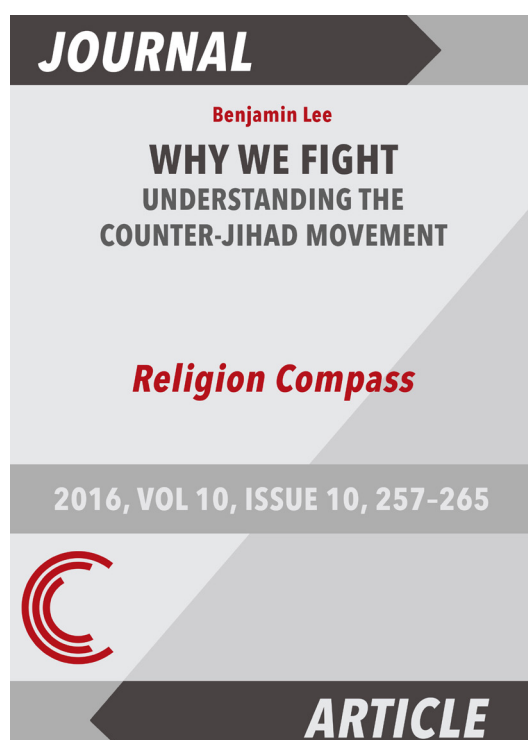
AFTER ISLAMIC STATE:
UNDERSTANDING THE END OF
THE CALIPHATE
CREST REPORT
www.crestresearch.ac.uk



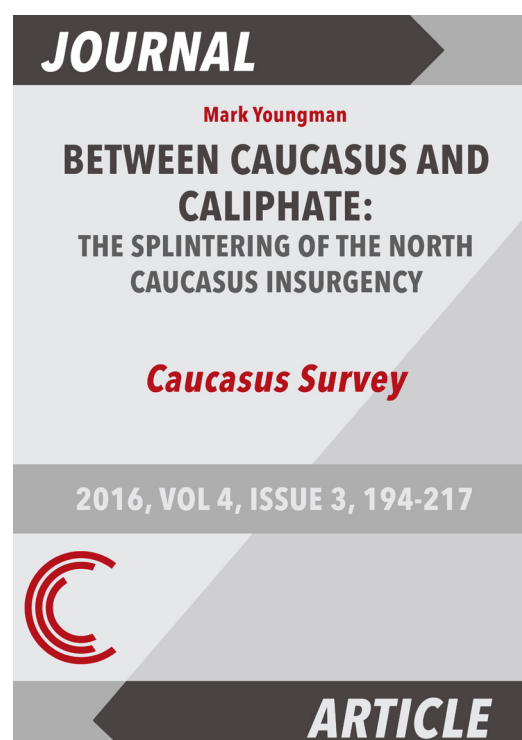
17-007-01

This report is the first in the series, After Islamic State: Understanding the end of the caliphate. It covers key questions concerning Iraq, Iran, Jordan and Syria, and highlights the underlying issues that contribute towards an environment where Islamist violence can thrive and threaten stability in these regions.

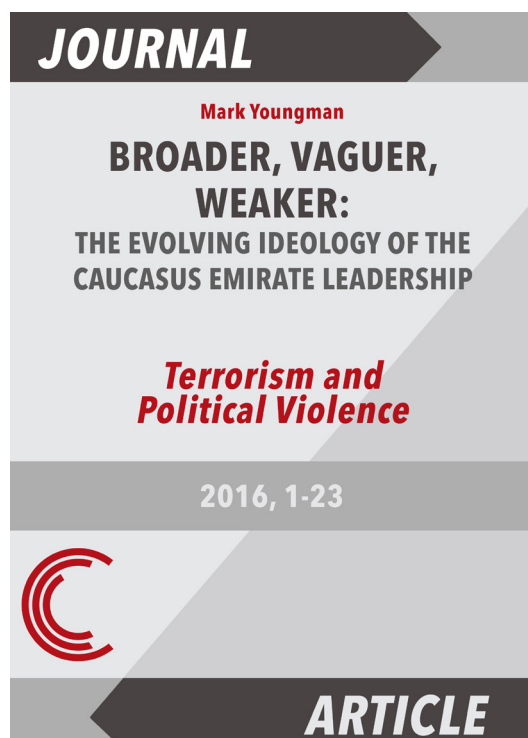
JOURNAL ARTICLES



DOI:10.1111/REC3.12208
<http://eprints.lancs.ac.uk/80734/>



DOI:10.1080/23761199.2016.1215055
<https://goo.gl/W4RbnA>



DOI:10.1080/09546553.2016.1229666
<https://goo.gl/x4B9zZ>



DOI: 10.1111/REC3.12208
<https://goo.gl/rtZFpQ>

JOURNAL ARTICLES

JOURNAL

Lukasz Piwek, David A. Ellis & Sally Andrews

**CAN PROGRAMMING
FRAMEWORKS BRING
SMARTPHONES INTO THE
MAINSTREAM OF
PSYCHOLOGICAL SCIENCE?**

Frontiers in Psychology

2016, VOL 7



ARTICLE

DOI:10.3389/FPSYG.2016.01252
<https://goo.gl/E7bh76>

JOURNAL

Paul J. Taylor, Donald Holbrook and Adam Joinson

**SAME KIND OF DIFFERENT:
AFFORDANCES, TERRORISM,
AND THE INTERNET**

Criminology & Public Policy

2017, VOL 16, ISSUE 1, 127-133



ARTICLE

DOI:10.1111/1745-9133.12285
<https://goo.gl/6aifAh>

JOURNAL

Benjamin Lee

**'IT'S NOT PARANOIA
WHEN THEY ARE REALLY
OUT TO GET YOU':
THE ROLE OF CONSPIRACY THEORIES IN
THE CONTEXT OF HEIGHTENED SECURITY**

*Behavioral Sciences of Terrorism
and Political Aggression*

2017, VOL 9, ISSUE 1



ARTICLE

DOI:10.1080/19434472.2016.1236143
<https://goo.gl/qaqHGx>

JOURNAL

Joanne Hinds and Adam Joinson

**RADICALIZATION,
THE INTERNET AND
CYBERSECURITY:
OPPORTUNITIES AND CHALLENGES
FOR HCI**

*Human Aspects of Information
Security, Privacy and Trust*

2017, 481-493



ARTICLE

DOI:10.1007/978-3-319-58460-7_33

BETTER INTELLIGENCE GATHERING AND DECISIONS

BETTER INTELLIGENCE GATHERING AND DECISIONS

How can we tell if someone told a lie? Which techniques can help people recall facts about an event? How are terrorist groups financed and what decisions do terrorists make to protect their security? Can social media use look unusual and how can we assess the value of information we receive?

These projects seek to help us understand how we can gather better information from and about groups and individuals. They also research how both terror groups and the services who respond to them make decisions, to help better anticipate and improve responses to critical incidents.

PROJECTS

CORE PROJECTS

- Developing and evaluating methods of online influence
- Language and engagement in ideological online forums
- Blockchain, social media and terrorist financing
- Methods for characterising typical and atypical social media users
- Language and rapport
- Eliciting intelligence from memory: Innovative tools, techniques and approaches
- Innovative techniques for information elicitation

- The verifiability approach
- Developing intelligence gathering methods that maximise the quantity and quality of information
- Collective interviewing
- What tactics does a smuggler use to avoid detection?

COMMISSIONED PROJECTS

- Expertise and inertia in Emergency Service decision making
- Assessing cognitive mechanisms of radicalisation with a quantitative analysis of Isis' online propaganda
- Terrorist decision making regarding security and risk
- Differences in the ability to spot rare, non-salient or hidden targets
- Means to Increasing information gain through minimal social exclusion
- Taking decisions about information value
- Quantifying the effectiveness of an evidence-based rapport-building training programme
- Imaginative scenario planning for law enforcement organisations.



THE VERIFIABILITY APPROACH

16-001-01

Research by CREST programme lead Professor Aldert Vrij has shown that when people tell lies in interviews they can struggle to provide the same number of checkable details as when they are telling the truth. We have provided a short guide based on this research aimed at interviewers.

HOW DOES IT WORK

“ Dr Matthew Francis, Senior Research Associate at Lancaster University looks at how recent research in interviewing is driving the understanding, countering and mitigation of terrorism. **”**

THE GUIDE'S GOAL

Lies often provide rich details to make their story seem more plausible. But people often fail to be checked by investigators will recall this. One way for lies to be checked is to provide a story that includes lots of detail – not only details that cannot easily be checked by the investigator.

Research has found that lies tend to report fewer checkable details than truth stories. The difference between truth and lies in reporting verifiable detail becomes larger when the investigator asks an interviewee at the beginning of the interview to be accurate about what the investigator asked. This request leads interviewees to provide more verifiable detail, but not lies.

USEFUL FOR

- Identifying interviewee verifiable details to generate accurate and reliable accounts
- Understanding interviewee lies and truth
- Identifying interviewee – verifiable details to generate accurate and reliable accounts



THE TIMELINE TECHNIQUE

16-002-02

HOW DOES IT WORK

“ The Timeline Technique helps interviewees recall and report events from a particular time period in sequence, identify individuals involved, and link those individuals with their actions. **”**

We use our ‘working memory’ to temporarily store and manage the information required to carry out complex cognitive tasks such as reasoning, decision-making, and organising recalled information.

Working memory has a limited capacity and can easily become overloaded. Recalling details about complex events that happened over a period of time is difficult for most people because it places a lot of demands on cognitive processing, including working memory. The Timeline Technique helps interviewees by giving them an intuitive way of organising their recall and reporting, which makes it easier to organise their thoughts and reduce demands on cognitive processing.

The Timeline Technique helps the interviewee to organise and report their recollections of the events occurring over an extended period, place events in the order or sequence in which they occurred, and identify key individuals encountered and the contexts in which they were encountered. Compared to a free recall technique like ‘Tell me everything you can remember about the event’, the Timeline Technique:

- is easier for the interviewee because it supports the interviewee's memory
- typically yields more detail about descriptions of people, actions, their work, responses, and verifiable details
- enables the interviewee to access a detailed initial understanding of the interviewee's experience over the relevant time period

As the method is largely well-validated, the interviewee is also less likely to encounter leading or suggestive questions that may influence or distort their account.

Based on research by CREST member Professor Lorraine Hope (Portsmouth) we have written a guide outlining The Timeline Technique. This technique can be used by interviewers to help interviewees by giving them an intuitive way of organising their recall and reporting, which makes it easier to organise their thoughts and reduces demands on working memory.



THE COGNITIVE INTERVIEW

16-006-01

The guide outlines the Cognitive Interview as a set of phases to be worked through. However, to be used effectively in the field it should be implemented as a toolbox of skills to be used strategically, including only those elements that are appropriate for the specific interview, and modifying or adapting the various elements as the situation demands.

AT A GLANCE: THE COGNITIVE INTERVIEW

An overview of the cognitive interview process, which aims to improve the recall of accurate and reliable information from an interviewee. The CREST programme lead Professor Aldert Vrij has shown that when people tell lies in interviews they can struggle to provide the same number of checkable details as when they are telling the truth. We have provided a short guide based on this research aimed at interviewers.

HOW DOES IT WORK

“ The Cognitive Interview is a toolbox of techniques – choose and use techniques strategically, according to your particular interview scenario, modifying or adapting the various elements as the interviewee or situation requires. **”**

WHAT IS THE COGNITIVE INTERVIEW (CI)?

The CI is a theory and evidence-based approach, designed to improve the recall of accurate and reliable information from an interviewee. The CI approach addresses three primary psychological processes that contribute to memory: (1) the social context of the interview, (2) the interviewee's and interviewer's cognitive processes, and (3) the communication between the interviewee and interviewer. The CI provides a set of phases to work through to establish the prime conditions to maximise retrieval from memory and to ensure communication of the retrieved information.

WHEN CAN IT BE USED?

The CI can be used, with an appropriate level of discretion, in any defined or interview where the goal is to elicit detailed information. The following description will outline the CI as a set of phases to be worked through. However, in the CI to be used effectively in the field, where the cognitive and social demands are acute (situation and interviewee), it cannot be used as a rigid and applied to all interviews in the same fashion. Rather, for greatest effect, it should be implemented as a toolbox of skills to be used strategically, including only those elements that are appropriate for the specific interview scenario, and modifying or adapting the various elements as the interviewee or situation demands.



THE MODEL STATEMENT TECHNIQUE

16-011-02

HOW DOES IT WORK

“ A model statement is an audio-taped statement in which someone explains what she has experienced in a great deal of detail. **”**

The main goal of an investigative interview is to elicit a complete account from an interviewee. This is more said than done. When asked an open-ended question at the beginning of an interview, interviewees typically do not provide all the information they know. One reason for this is that not all information stored in an interviewee's memory is easy for them to retrieve.

A second reason is that interviewees initially do not report all they can remember because they think that only details that are important are not important or relevant enough to report, in general. Interviewees often provide more detail when asked to talk about their activities because they don't want to leave their conversation partner with excessive detail. Interviewees also tend to apply

their ‘convention rule’ in fact, in interview settings interviewees may say even less than usual. Interviewers typically are more to their friends and relatives than to people they do not know.

So how can we encourage interviewees to report more detail in interview settings? One promising technique involves the use of a ‘model statement’.

A model statement is an audio-taped statement in which someone explains what she has experienced in a great deal of detail. Interviewees who listen to a model statement before talking about their experiences tend to produce more detail than interviewees who do not listen to a model statement. A possible explanation for this effect is that the request to be detailed is an instruction, whereas the model statement is an example. It is probably easier for interviewees to follow examples than to follow instructions.

Based on the research by CREST programme lead Professor Aldert Vrij, this guide details how can we encourage interviewees to report more detail in interview settings using a technique that involves the use of a ‘model statement’.

GUIDES



THE UNEXPECTED QUESTIONS TECHNIQUE

HOW DOES IT WORK

“Preparing for anticipated questions makes lying easier and planned lies contain fewer cues to detect than spontaneous lies. But this strategy is only successful if liars can anticipate what questions will be asked.”

A consistent finding in deception research is that liars prepare themselves for anticipated interviews. They do so by preparing possible answers to questions they expect to be asked. This strategy of preparing answers for possible questions is called 'planning' and is a key feature of the unexpected questions technique.

See little circles either side of the circle, a possible answer on the spot, which may find difficult to do.

Expected questions should be easier for liars to answer than unexpected questions for which they haven't prepared. The additional cognitive load that liars experience when answering unexpected questions tends to be more evident in their responses. Typically, liars give less detailed and/or less plausible answers to unexpected questions compared to expected questions. In contrast, truth tellers generally experience the same cognitive load when answering expected and unexpected questions, so their answers to both question types tend to be comparable.

However, preparing for questions has a limitation. It will be a successful strategy only if liars correctly anticipate which questions will be asked. Investigators can exploit this limitation by asking questions that liars do not anticipate. Though liars can often answer unexpected questions by using 'I don't know' or 'I can't remember' such responses will usually require them to discuss central aspects of the target event. A lie, therefore,

16-014-01

A consistent finding in deception research is that liars prepare themselves for anticipated interviews.

They do so by preparing possible answers to questions they expect to be asked. Based on research by CREST programme lead Professor Aldert Vrij, this guide details why the unexpected question technique works and how to use it, with good and bad examples of questions, for single and multiple interviewees.



WHEN DOES (IN) CONSISTENCY MATTER?

“...there are a number of factors that should be considered when assessing the overall consistency of a remembered account.”

INTRODUCTION

Cooperative individuals may be interviewed or debriefed about their memories for different events, perhaps on a number of occasions – perhaps in different settings and by different people using different information elicitation strategies. The consistency of information provided across all of the same accounts or between several accounts is often used to measure the overall accuracy of the information or assess the credibility of the interviewee.

However, there are a number of factors that should be considered when assessing the overall consistency of a remembered account.

First, there are different types of inconsistency. Some inconsistencies are the result of natural

occurring memory phenomena. The way people remember and recall things tends to be natural and may be different from what is actually true. Other types of inconsistency may be more problematic and may warrant further consideration.

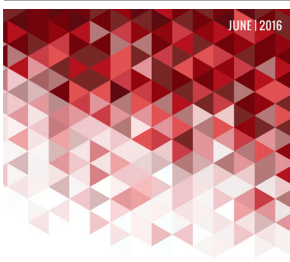
Second, only certain types of inconsistency are associated with an increased likelihood of memory error. This means that understanding what type of inconsistency you are assessing is important for enhancing accuracy.

So it's important for interviewers to distinguish between different types of inconsistency so they can make a good judgement about where threats to accuracy lie.

16-031-01

It's important for interviewers to distinguish between different types of inconsistency so they can make a good judgement about where threats to accuracy lie. How can they do this? Based on the work by CREST researcher Professor Lorraine Hope, this guide details how to distinguish between different types of inconsistency and how to help make a good judgement about where threats to accuracy lie.

REPORTS



MASTERCLASS IN ELICITING INTELLIGENCE INFORMATION

Masterclass in
Eliciting Intelligence Information
CREST
REPORT
www.crestresearch.ac.uk

JUNE | 2016

16-030-01

CREST researchers delivered a masterclass on intelligence interviewing to over fifty practitioners from European government, police and military organisations. The day covered new techniques and findings from ground breaking research and was delivered in partnership with the IIIRG. This report is a summary of the presentations.

JOURNAL ARTICLES

JOURNAL

Aldert Vrij, Ronald P. Fisher and Hartmut Blank

A COGNITIVE APPROACH TO LIE DETECTION: A META-ANALYSIS

*Legal and Criminological
Psychology*

2016, VOL 22, ISSUE 1, 1-21



ARTICLE

DOI:10.1111/LCRP.12088

<https://goo.gl/MDdrSj>

JOURNAL

Lorraine Hope, et al.

MEMORY AND THE OPERATIONAL WITNESS: POLICE OFFICER RECALL OF FIREARMS ENCOUNTERS AS A FUNCTION OF ACTIVE RESPONSE ROLE

Law and Human Behavior

2016, VOL 40, ISSUE 1, 23-35



ARTICLE

DOI:10.1037/LHB0000159

<https://goo.gl/5UKxBY>

JOURNAL

Galit Nahari and Aldert Vrij

CAN SOMEONE FABRICATE VERIFIABLE DETAILS WHEN PLANNING IN ADVANCE? IT ALL DEPENDS ON THE CRIME SCENARIO

Psychology, Crime & Law

2016, VOL 21, ISSUE 10, 987-999



ARTICLE

DOI:10.1080/1068316X.2015.1077248

<https://goo.gl/cWCXv8>

JOURNAL

Nicholas Ryder

OUT WITH THE OLD AND...IN WITH THE OLD? A CRITICAL REVIEW OF THE FINANCIAL WAR ON TERRORISM ON THE ISLAMIC STATE OF IRAQ AND LEVANT

*Studies in Conflict
& Terrorism*

2016, 1-17



ARTICLE

DOI:10.1080/1057610X.2016.1249780

<http://eprints.uwe.ac.uk/28343>

JOURNAL ARTICLES

BOOK

Christos Charitonidis, Awais Rashid & Paul J. Taylor

PREDICTING COLLECTIVE ACTION FROM MICRO-BLOG DATA

Prediction and Inference from Social Networks and Social Media

2016, 141-170



CHAPTER

DOI: 10.1007%2F978-3-319-51049-1_7

JOURNAL

Miriam S. D. Oostinga, Ellen Giebels & Paul J. Taylor

AN ERROR IS FEEDBACK: THE EXPERIENCE OF COMMUNICATION ERROR MANAGEMENT IN CRISIS NEGOTIATIONS

*Police Practice and Research,
an International Journal*

2016, 1-14



ARTICLE

DOI:10.1080/15614263.2017.1326007
<https://goo.gl/TZy8KS>

JOURNAL

Emma Williams, Amy Beardmore and Adam Joinson

INDIVIDUAL DIFFERENCES IN SUSCEPTIBILITY TO ONLINE INFLUENCE: A THEORETICAL REVIEW

*Computers in
Human Behavior*

2017, VOL 72, 412-421



ARTICLE

DOI:10.1016/J.CHB.2017.03.002
<https://goo.gl/zkzjUU>

BOOK

Paul J. Taylor and William A. Donohue

LESSONS FROM THE EXTREME: WHAT BUSINESS NEGOTIATORS CAN LEARN FROM HOSTAGE NEGOTIATIONS

*The Negotiator's
Desk Reference*

2017



CHAPTER

ISBN:9780982794616

JOURNAL ARTICLES

JOURNAL

Aldert Vrij and Ronald P. Fisher

WHICH LIE DETECTION TOOLS ARE READY FOR USE IN THE CRIMINAL JUSTICE SYSTEM?

*Journal of Applied Research in
Memory and Cognition*

2016, VOL 5, ISSUE 3, 302-307



ARTICLE

DOI:10.1016/J.JARMAC.2016.06.014
<https://goo.gl/1PTmXr>

JOURNAL

Dave Walsh, Becky Milne and Ray Bull

ONE WAY OR ANOTHER? CRIMINAL INVESTIGATORS' BELIEFS REGARDING THE DISCLOSURE OF EVIDENCE IN INTERVIEWS WITH SUSPECTS IN ENGLAND AND WALES

*Journal of Police and
Criminal Psychology*

2016, VOL 31, ISSUE 2, 127-140



ARTICLE

DOI:10.1007/S11896-015-9174-5
<https://goo.gl/rWCqyZ>

CONFERENCE

Tom Carrick, Awais Rashid and Paul J. Taylor

MIMICRY IN ONLINE CONVERSATIONS: AN EXPLORATORY STUDY OF LINGUISTIC ANALYSIS TECHNIQUES

*Advances in Social Networks
Analysis and Mining*

2016, IEEE/ACM CONFERENCE



CONTRIBUTION

DOI:10.1109/ASONAM.2016.7752318
<https://goo.gl/gmg7kL>

BOOK

Karen Harrison and Nicholas Ryder

THE LAW RELATING TO FINANCIAL CRIME IN THE UNITED KINGDOM AN EXPLORATORY STUDY OF LINGUISTIC ANALYSIS TECHNIQUES

Routledge

2017, 2ND EDITION



ISBN:9781409423898
<http://eprints.uwe.ac.uk/28343/>

JOURNAL ARTICLES



DOI:10.1098/RSOS.170128

<https://goo.gl/MdR8kF>

PROTECTING OURSELVES

PROTECTING OURSELVES

How can we patch security vulnerabilities with people rather than relying solely on technology? How can we prevent low-level breaches in security by well-meaning employees? What can people's digital footprints tell us about their personality? What are the barriers to reporting friends and families suspected of extremism to the authorities, and how do people keep secrets online?

These projects address our need to better understand how we can protect ourselves. They include researching how security professionals can communicate better with employees about how to protect organisations as well as understanding and mitigating the risk of large-scale change leading to counterproductive behaviour in employees.

They also include projects looking at how we can keep secrets online and better understand why people might not report friends and family members they suspect of involvement in extremism.

PROJECTS

CORE PROJECTS

- The simple model of rational security
- Security dialogues
- The workplace village
- Studies of digital footprints and remote assessment of personality

COMMISSIONED PROJECTS

- Reporting violent extremist activity and involvement in foreign conflict
- Assessing and mitigating the impact of organisational change on counterproductive work behaviour
- The cyber security risks of digital hoarding
- Keeping secrets online



MESSAGING APPLICATIONS

16-003-02

A guide introducing the characteristics of messaging applications which may be useful for terrorist and criminal

behaviour. The guide covers Facebook Messenger, Firechat, Kik, Paltalk, Snapchat, Telegram, Twitter, and WhatsApp.

CHARACTERISTICS

Messaging applications have become an increasingly popular means of communication for individuals and groups. The vast majority use these applications for benign social and business use. However, terrorists and criminals can also use messaging applications, including for planning and coordination of their activities, to provide ideological and personal support, and to groom potential recruits. This guide covers messaging applications in use in 2015 which have features that may be useful for terrorists and criminals. It explains what they are, and highlights their main characteristics.

The main characteristics include:

- Privacy** - Messages between a user and another user are encrypted and whether they have read or not is not visible. This information affects a user's confidence in whether recipients have read their messages and their expectations of receiving replies. If recipients have control over their online presence, they can easily block or avoid responses.
- Instantaneous** - The requirement for a user to read a message in order to receive their identity and how quickly those are received. Users may be prevented from using an application unless they can prove their identity using email address or mobile number. The extent to which identities are verified can influence whether people trust those they communicate with.
- Anonymous** - The extent to which a person is identifiable. Users may be able to conceal their identity by using pseudonyms or create accounts under different names that are not linked to their real contact details. A username is associated with a phone number, the real identity of the user may be revealed if the messaging application more extensively the contacts on an individual phone.



WHY DO PEOPLE CLICK ON PHISHING LINKS?

16-004-01

Based on work by CREST researchers Professor Adam Joinson and Dr Joanne Hinds we have

published an introductory guide to help individuals and organisations understand some of the techniques used by fraudsters and what they can do about them.

HOW DOES IT WORK

Criminals can utilize online data to tailor phishing techniques to a person's preferences and trick them into disclosing personal information.

Phishing is the attempt to gain personal information through the use of fake emails and websites. Fraudsters typically masquerade as legitimate organizations or trustworthy individuals and persuade people to disclose personal information by clicking on links or filling in forms.

Phishing is a major problem because people disclose and manage much of their personal information online (e.g. shopping, bills, bank accounts). People also provide detailed information about their interests through social media. Criminals can utilize this online data to tailor phishing techniques to a person's preferences and trick them into disclosing personal information. It is a common approach used in other security attacks with little effort and cost and critical national infrastructure increasingly targets. This document examines the different approaches to phishing and outlines the main reasons that people click on phishing links.

TYPES OF PHISHING

There are a number of approaches used by phishers, which include email spam, instant messaging, the manipulation of search engines that send users to a phishing website and content aggregation content on a website which is manipulated to draw users to a phishing website. Specific types of phishing include:

- Spear phishing** - directed at specific individuals or companies. Phishers may gather personal information about their target to increase the credibility of the message.
- Clone phishing** - phishers use the content and layout of a legitimate website to create a phishing link and a false reply to address.
- Whaling** - phishers target business and high-profile senior executives. The content will be designed to appear more official to appear to the upper management of a company.



WHAT MAKES SPOTTING FACES DIFFICULT?

16-025-01

Intuitively, we might assume that humans can search for more than one unfamiliar face at a time.

The reality is quite different. When asked to search simultaneously for two unfamiliar faces, one is prioritised and there is a cost to searching for the second target face, regardless of how difficult the search is.

KEY POINTS

- The ability of working memory means only one unfamiliar face can be identified at a time.
- People find it harder to discriminate between other faces.
- People find it harder to discriminate between other faces.
- Some people are more experienced with superior recall of unfamiliar faces.
- People can be trained to improve in facial recognition.

Intuitively, we might assume that humans can search for more than one unfamiliar face at a time. The reality is quite different. When asked to search simultaneously for two unfamiliar faces, one is prioritised and there is a cost to searching for the second target face, regardless of how difficult the search is.



HOW TRAINING AND PROFESSIONAL EXPERIENCE AFFECT THE ABILITY TO SPOT TARGETS

16-026-01

The goal of workforce training is to enable people to quickly reach a level of competency that allows them to perform their work effectively. When the work task is search, the good news is that for a newcomer search and image comparison generally improves with practice. A well-designed training programme can accelerate practice effects. But what does it mean for a training programme to be well-designed?

KEY POINTS

- A well-designed training programme can accelerate practice effects.
- But what does it mean for a training programme to be well-designed?
- The goal of workforce training is to enable people to quickly reach a level of competency that allows them to perform their work effectively. When the work task is search, the good news is that for a newcomer search and image comparison generally improves with practice. A well-designed training programme can accelerate practice effects. But what does it mean for a training programme to be well-designed?
- Practice should not oversimplify the task. If a task is complex, training should not present only the easiest examples. Rather, difficult and easy examples should be presented from the start. The better the range of practice examples, the easier it is for people to apply what they learn to new examples.
- Practice should be adaptive. While not over-identifying, it makes the task achievable from the start, according to the skill the trainee shows. As skill improves, difficulty increases.
- Practice should give feedback. If possible, feedback should be specific to individual decisions rather than an overall performance evaluation. It should also point the way to what to do differently.
- If a task involves multiple parts, practice all parts of the task. The coordination of different parts of a task is a skill in itself that often needs practice, and so if different parts are learned separately, the coordination skill is not learned.

GUIDES



FINDING HIDDEN TARGETS

“The good news about searching for a camouflaged target is that practice at breaking one kind of camouflage seems to develop skill at breaking other kinds of camouflage.”

CAMOUFLAGED OBJECTS

Sometimes the difficulty of finding a target lies in the similarity of the target to other objects or to the background, as well as in the complexity of the background. Our eyes are naturally drawn to regions with the most noticeable discontinuities in colour, brightness or other features, and so when there are many of these regions in a scene, the target will be more difficult to find. Camouflage that matches markings and colour of a target with markings and colour of the background lowers the salience of the target itself.

When people search through a scene for a target they know will be camouflaged, they have difficulty suppressing their 'natural tendency' to look at objects that stand out and so cannot possibly be targets.

Although suppressing the visibility of object regions is central to how camouflage works,

sometimes this works by presenting misleading edges. This is done by including such local changes to patterns near some of the edges of the target, distracting people from seeing the real edges.

The good news about searching for a camouflaged target is that practice at breaking one kind of camouflage seems to develop skill at breaking other kinds of camouflage.

READ IN MORE

What is camouflage? You have been trained to suppress looking at stand-out objects. Spotting moving camouflaged objects may be different.

16-027-01

What can influence our ability to find hidden targets? Based on research by CREST researchers Professor

Nick Donnelly, Dr Anne Hillstrom and Dr Natalie Mestry, this guide presents an overview of some of the difficulties in detecting hidden targets.



DETECTING RARE TARGETS

“Long-term history of target likelihood is more influential than what has happened on recent trials or what is predicted to happen.”

COMMON VS RARE TARGETS

It is more difficult to detect rare targets than common targets. Low target prevalence leads people to search less persistently for evidence of the target before deciding that it is absent.

When the detection task requires search through multiple objects, the behaviour demonstrated is that (a) observers often look at but fail to identify the rare targets when present, and (b) observers are more likely to look at each object in the display only once. If (a) or (b) of these behaviours limit the likelihood of missing the target when it is present.

This doesn't occur simply because observers are generally prepared to 'let the target' be present. Researchers have shown this by asking observers to search for long targets when one is substantially more common than the other, which raised the overall likelihood of reporting that a target is present compared

to the situation of searching for only the rare target. In this scenario, where on any trial either no target is present or one of the targets is present, observers still have a tendency to miss the rare target.

TARGET PREVALENCE

The expectation of how likely it is that a target will appear builds up slowly over experience with the detection task. Long-term history of target likelihood is more influential than what has happened on recent trials or what is predicted to happen. Performance can be affected by the length of time spent on a detection task.

However, research suggests that target prevalence does not have an effect on whether observers can detect performance. In addition, when time-on-task does affect performance, this effect is not varied by target prevalence.

16-028-01

The expectation of how likely it is that a target will appear builds up slowly over experience with the detection task. Long-term history of target likelihood is more influential than what has happened on recent trials or what is predicted to happen. Performance can be affected by the length of time spent on a detection task. However, whether the target being searched for is rare or not does not affect performance.



INDIVIDUAL DIFFERENCES IN ABILITY TO SEARCH

“Successful search requires perception, memory, attention and decision-making skills. All of these vary amongst people.”

DIFFERENCES IN DISCRIMINATION OF TARGET FROM NON-TARGET

Some differences between people affect the ability to discriminate targets from non-targets or to integrate targets from the background. These are differences based on either perceptual ability or ability to hold in mind sufficient information to make a good decision. The skills that affect this are cognitive abilities. Working memory capacity is how much information a person can keep in mind for a period of time. Speed of processing is how quickly something can be perceived or how quickly a simple response can be made.

Functional field of view is the breadth of the visual world from which information can be detected without moving the eyes. Attention to detail is the degree to which people can ignore peripheral or contextual information when

focused on a small region. Spatial ability is the degree to which people can orient to particular spatial locations and the degree to which they can mentally rotate images they hold in their minds. Finally, sustained attention ability is the degree to which a person can maintain the same task goal.

All of these abilities can be trained, but there is conflicting information about whether training on the basic ability transfers to complex tasks easily, or whether it only transfers when certain kinds of training are used.

Some of these abilities differ for people from different groups. It is important to understand, though, that group differences are average differences, and there is a lot of overlap between the groups. In other words, if one group performs worse than another, on average, there will still be high ability people in the first group.

16-029-01

There are a number of factors which can affect peoples' ability to search and detect targets. These

can be cognitive abilities like perception and working memory. Functional factors like how much someone can see without moving their eyes can also play a role. Based on research in this CREST project, this guide presents an overview of these differences.

REPORTS

Community Reporting Thresholds

Sharing information with authorities concerning violent extremist activity and involvement in foreign conflict

A UK Replication Study

Paul Thomas University of Huddersfield, UK
Michele Grossman Deakin University, Australia
Sharon Hogg University of Huddersfield, UK
Kris Christensen University of Huddersfield, UK

UNIVERSITY OF
HUDDERSFIELD



COMMUNITY REPORTING THRESHOLDS

FULL REPORT

17-018-01

The first people to suspect or know about someone becoming involved in planning acts of violent extremism, will often be those closest to them. Based on research by CREST researchers Professors Paul Thomas and Michele Grossman, this full report details the indentifying triggers, thresholds and barriers which may prevent community members from reporting potential violent extremist behaviour.

Community Reporting Thresholds

Executive Summary

Background and scope of the report

Background and scope of the report

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COMMUNITY REPORTING THRESHOLDS

EXECUTIVE SUMMARY

17-019-01

This is the executive summary of the Community Reporting Thresholds report. It looks at the reporting of potential violent extremism and terrorism, with focus on identifying triggers, thresholds and barriers which may stop someone from reporting, providing the key findings and conclusions from the research conducted by CREST researchers Professors Paul Thomas and Michele Grossman.

JOURNAL

Debi Ashenden and Darren Lawrence

**SECURITY DIALOGUES:
BUILDING BETTER RELATIONSHIPS
BETWEEN SECURITY AND BUSINESS**

EEE Security & Privacy

2016, VOL 14, ISSUE 3, 82-87



ARTICLE

DOI: 10.1109/MSP.2016.57
<https://goo.gl/5hfUtr>

JOURNAL

Debi Ashenden

**EMPLOYEES:
THE FRONT LINE IN CYBER SECURITY**

thechemicalengineer.com.

27 FEB 2017



ARTICLE

DOI:10.1007/S11896-015-9174-5
<https://goo.gl/AbnggY>

BOOK

Adam Joinson and Lukasz Piwek

**TECHNOLOGY AND THE
FORMATION OF SOCIALLY
POSITIVE BEHAVIOURS**

*Beyond Behaviour Change:
Key issues, interdisciplinary
approaches and future
directions*

2016



CHAPTER

ISBN:978-1447317562

CREST SECURITY REVIEW



CREST Security Review is a quarterly magazine which provides a gateway to the very best knowledge and expertise. The articles in *CSR* translate academic jargon to 'so what' answers and illustrate how behavioural and social science can be used effectively in everyday scenarios.

The mission of *CREST Security Review* is to equip its audience with knowledge about the latest research that seeks to understand, mitigate and counter security threats. Each issue has a core of articles focusing on a particular theme, accompanied by a number of general interest pieces.

You can download issues of *CSR* from our website (www.crestresearch.ac.uk/csr) for free. Look out for forthcoming issues on 'Decision Making', 'Ethics', 'Influence' and 'Data'.

CSR: INFORMATION ELICITATION



CREST SECURITY REVIEW: INFORMATION ELICITATION

ISSUE 1

With a special focus on Information Elicitation this issue showcases research on why we are more trusting online, eliciting information the friendly way, and which lie detection techniques work. Other articles cover how your watch will soon know you better than yourself and what are the similarities and differences between Sunni and Shi'a Muslims.

YOUR WATCH WILL SOON KNOW YOU BETTER THAN YOU KNOW YOURSELF - p4

THE TRICKS OF MASTER INTERROGATOR HANS SCHARFF UNCOVERED - p14

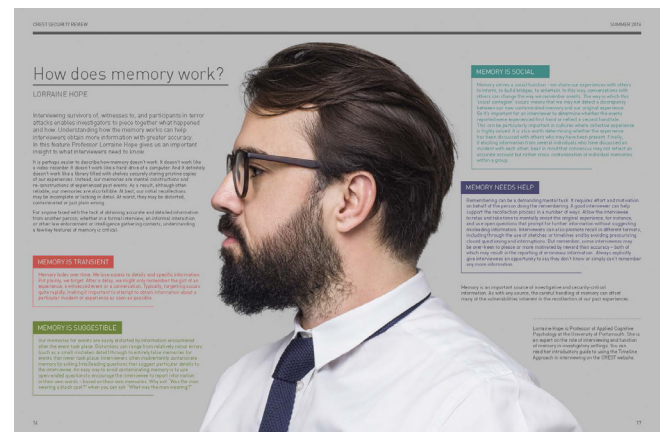
SCIENCE AND THE LIE DETECTORS: WE REVIEW WHICH ONES WORK - p18

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CSR: CYBER SECURITY



CREST SECURITY REVIEW: CYBER SECURITY

ISSUE 2

This issue of CSR considers social science contributions to cyber security. It highlights research on 'everyday insider threats' to organisations, the threat from cyber enabled and cyber dependent crimes and the hacker mind set. There's also a long-read on the future of religious belief and extremism as well as findings from research on English Defence League activists.

LOAFERS, FREE-RIDERS
AND SUCKERS - EMPLOYEES
BEHAVING BADLY - p10

A MANIFESTO FOR NEW
APPROACHES TO SECURITY
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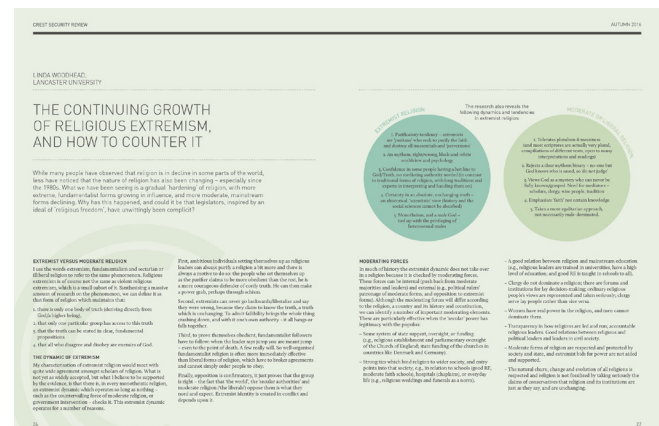
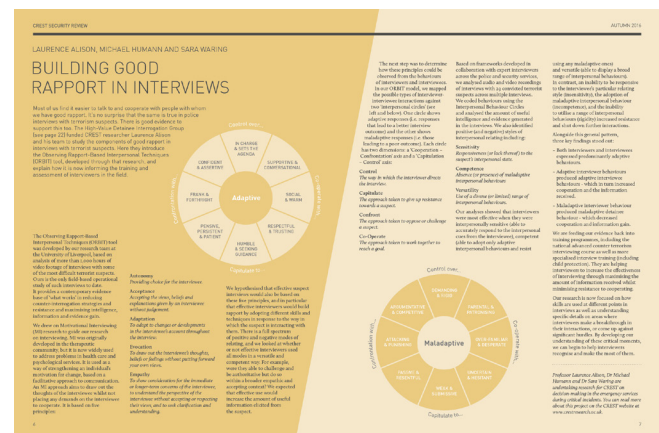
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CSR: TRANSMISSION



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JUST A FACE IN THE CROWD? THE PROBLEMS WITH SPOTTING UNFAMILIAR FACES – p26

HOW RADICAL IDEAS SPREAD AND TAKE HOLD – p24

CREST SECURITY REVIEW: TRANSMISSION

ISSUE 3

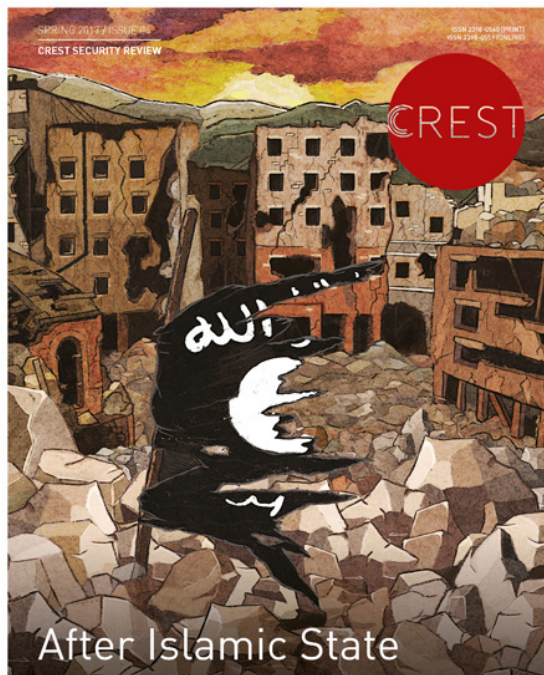
Understanding how extremist ideas are transmitted is a key priority of many governments and law enforcement, security and intelligence agencies. This issue of *CSR* focuses on 'transmission' – the transmission of ideas, beliefs and values. Studying transmission focuses attention on how, where and by whom extremist ideologies are acquired and spread. Most ideas and values are not extreme, and the issue includes articles on transmission of religious identity within families and on how the internet has affected transmission.

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CSR: AFTER ISLAMIC STATE



YEMEN, JORDAN, IRAN, LIBYA, TUNISIA - WHAT HAPPENS AFTER ISLAMIC STATE? - p4

WHAT HAPPENS TO THE CHILDREN OF THE CALIPHATE? - p10

ISLAMIC STATE AND AYMAN AL-ZAWAHIRI'S ALTERNATIVE JIHAD - p14

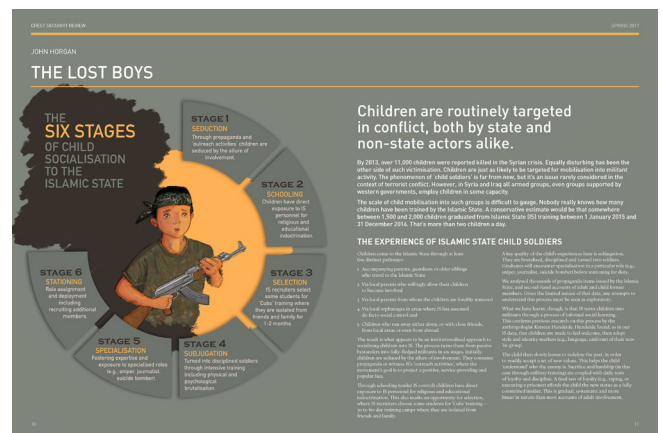
CREST SECURITY REVIEW: AFTER ISLAMIC STATE

ISSUE 4

The Islamic State's territory is in decline. Squeezed on all sides, it is facing a future where it can no longer lay claim to statehood. In this issue of *CREST Security Review* (CSR), leading scholars from around the globe consider 'what happens after Islamic State?' Topics include the plight of children forced to join Islamic State; the effects on countries like Yemen - which may become an ideal location for retreating fighters; and how al-Qaeda may benefit from Islamic State's decline.

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CSR: NETWORKS



CREST SECURITY REVIEW: NETWORKS

ISSUE 5

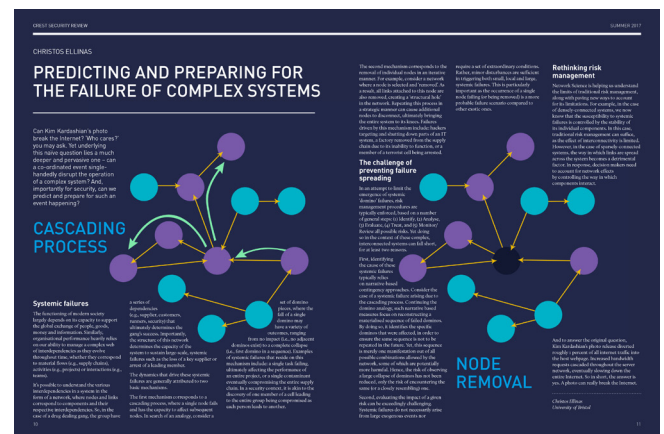
Studying networks not only gives us an insight into our human behaviour. It also helps us understand weak points in critical networks, be it food or energy supply, or in the way a company is run. This issue of CSR highlights how studying networks can help us understand security threats and how understanding weak points in networks can be useful in both offensive and defensive applications.

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DIGESTS

CREST DIGEST:

A ROUND UP OF RESEARCH

The *CREST Digest* is a short research scan of published, peer-reviewed academic research. It provides a round-up of research relevant to understanding and countering security threats.

We scan through hundreds of peer-reviewed journals looking for research that makes an important contribution, and is timely, novel or thought-provoking. After picking the journals and articles we think are most of interest, we then strip it down to a short, jargon-free, accurate summary of the research.

Every edition is broken down into summaries of the key research, including:

- New research – a scan of the current research on security threats
- Articles that caught our eye – novel or thought-provoking articles we think you'll find of interest
- New journal issues – summarising the latest publications as well as new books
- Beyond the peer-reviewed literature – reports from journalists, researchers, think tanks and governments.

DIGEST: ISSUE 1

17-005-01

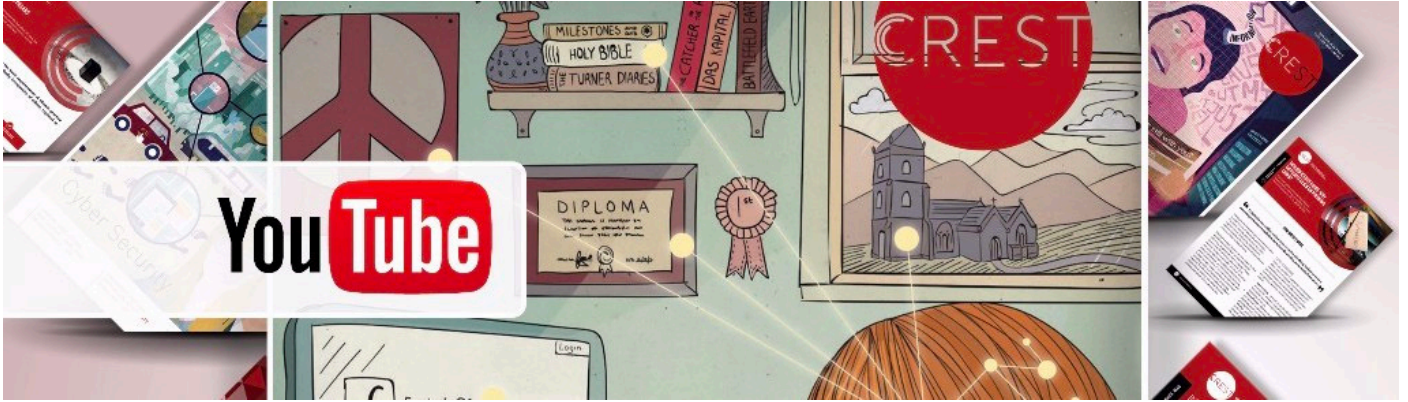


DIGEST: ISSUE 2

17-006-01



ONLINE RESOURCES



VIDEOS: CREST On Youtube

Our YouTube channel showcases some of the research and work undertaken by CREST Researchers. Watch these videos and learn more about what other CREST researchers are doing.

Go to <https://www.youtube.com/channel/UCUZZK6-m7tipdvM7oliDMYNw> and subscribe to our channel so you don't have to manually search for new videos we upload.



IMAGES: CREST On Flickr

The CREST Flickr page provides a channel where all our fantastic images are collected in one place, making it easier to find, use and share CREST images. Go to www.flickr.com/photos/crestresearch to see all our images, and follow us to be updated when new images added.

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www.crestresearch.ac.uk

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