

“Men of the Professor Type” Revisited

The Work of the CSaP/Global Uncertainties Visiting Fellow

Introduction

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Tristram Riley-Smith

tr356@cam.ac.uk

Fellowship Objectives

What?

Explore, develop and test mechanisms to promote engagement between academia and the National Security (NS) domain.

Why?

Our research base has a vital contribution to make to the security of the UK and the wider world, but there's a disconnect between NS stakeholders who own the challenges, and researchers with answers.

Who are the “NS stakeholders”?

This Fellowship has focused on the work of ...

- Centre for Applied Science & Technology (CAST) & Office for Security & Counter Terrorism (OSCT) in the Home Office;
- Centre for Protection of National Infrastructure (CPNI);
- Defence Science & Technology Lab (Dstl) in the MOD;
- Office for Cyber-Security & Information Assurance (OCSIA) in the Cabinet Office;
- Security & Intelligence Agencies: MI5, MI6, GCHQ.

The Global Uncertainties Programme



A major theme of RCUK addressing the cross-cutting, interdisciplinary and international nature of security challenge. There are six themes.

- **Terrorism;**
- **Cyber-security**
- **Threats to Infrastructures**
- **Countering CBRN Proliferation**
- **Transnational Organised Crime**
- **Ideologies & Beliefs.**

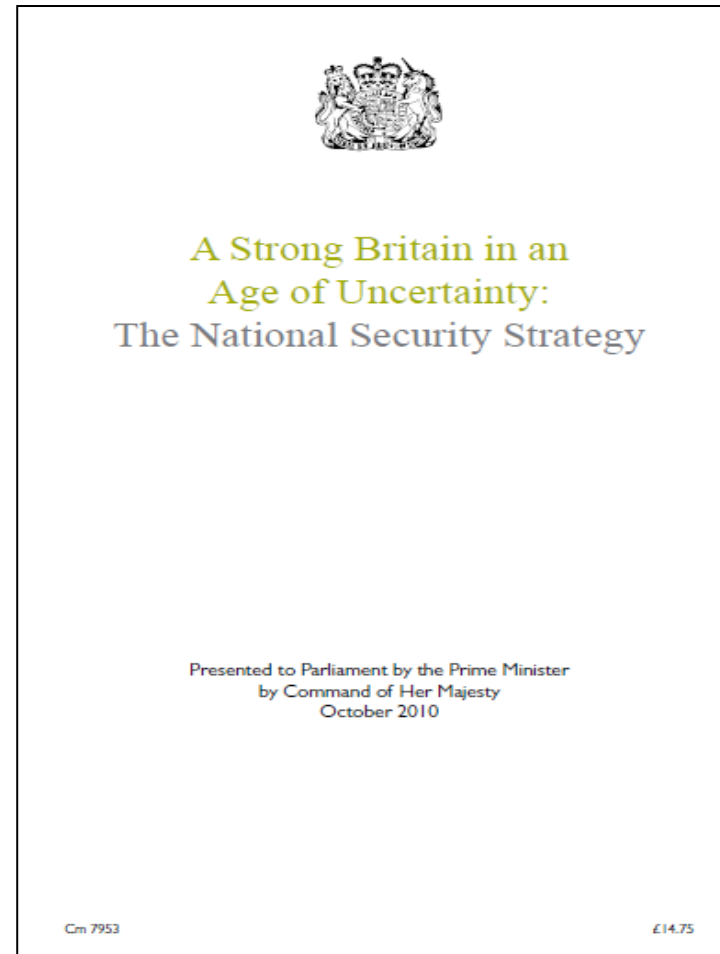
The NS Strategy

David Cameron and Nick Clegg, writing in the Foreword. October 2010

“

Britain today is both more secure and more vulnerable than in most of her long history. We do not currently face a conventional threat of attack on our territory by a hostile power. But we are one of the most open societies, in a world that is more networked than ever before. All of this calls for a radical transformation in the way we think about national security and organise ourselves to protect it.

”



National Security Risks

National Security Strategy: page 27

The four highest priority risks facing the UK until 2015 are:

- terrorism (including a CBRN attack);
- hostile attacks on UK cyber-space and/or large-scale cyber-crime;
- major accidents or natural hazards (e.g. coastal flooding or a 'flu epidemic);
- international military crises.

National Security Strategy: Priority Risks

Tier One: The National Security Council considered the following groups of risks to be those of highest priority for UK national security looking ahead, taking account of both likelihood and impact.

- International terrorism affecting the UK or its interests, including a chemical, biological, radiological or nuclear attack by terrorists; and/or a significant increase in the levels of terrorism relating to Northern Ireland.
- Hostile attacks upon UK cyber space by other states and large scale cyber crime.
- A major accident or natural hazard which requires a national response, such as severe coastal flooding affecting three or more regions of the UK, or an influenza pandemic.
- An international military crisis between states, drawing in the UK, and its allies as well as other states and non-state actors.

Tier Two: The National Security Council considered the following groups of risks to be the next highest priority looking ahead, taking account of both likelihood and impact. (For example, a CBRN attack on the UK by a state was judged to be low likelihood, but high impact.)

- An attack on the UK or its Overseas Territories by another state or proxy using chemical, biological, radiological or nuclear (CBRN) weapons.
- Risk of major instability, insurgency or civil war overseas which creates an environment that terrorists can exploit to threaten the UK.
- A significant increase in the level of organised crime affecting the UK.
- Severe disruption to information received, transmitted or collected by satellites, possibly as the result of a deliberate attack by another state.

Tier Three: The National Security Council considered the following groups of risks to be the next highest priority after taking account of both likelihood and impact.

- A large scale conventional military attack on the UK by another state (not involving the use of CBRN weapons) resulting in fatalities and damage to infrastructure within the UK.
- A significant increase in the level of terrorists, organised criminals, illegal immigrants and illicit goods trying to cross the UK border to enter the UK.
- Disruption to oil or gas supplies to the UK, or price instability, as a result of war, accident, major political upheaval or deliberate manipulation of supply by producers.
- A major release of radioactive material from a civil nuclear site within the UK which affects one or more regions.
- A conventional attack by a state on another NATO or EU member to which the UK would have to respond.
- An attack on a UK overseas territory as the result of a sovereignty dispute or a wider regional conflict.
- Short to medium term disruption to international supplies of resources (e.g. food, minerals) essential to the UK.

Seven Priority NS Challenges

Source: HMG White Paper *National Security through Technology* (February 2012) p 38

- protect from IEDs
- Identify/mitigate CBRN threats
- protect from cyber threats
- understand human & social dynamics
- communicate rapidly/effectively including data from sensors in challenging environments
- extract value from complex, multiple data sources, media and streams
- identify/assess future risks & threats.



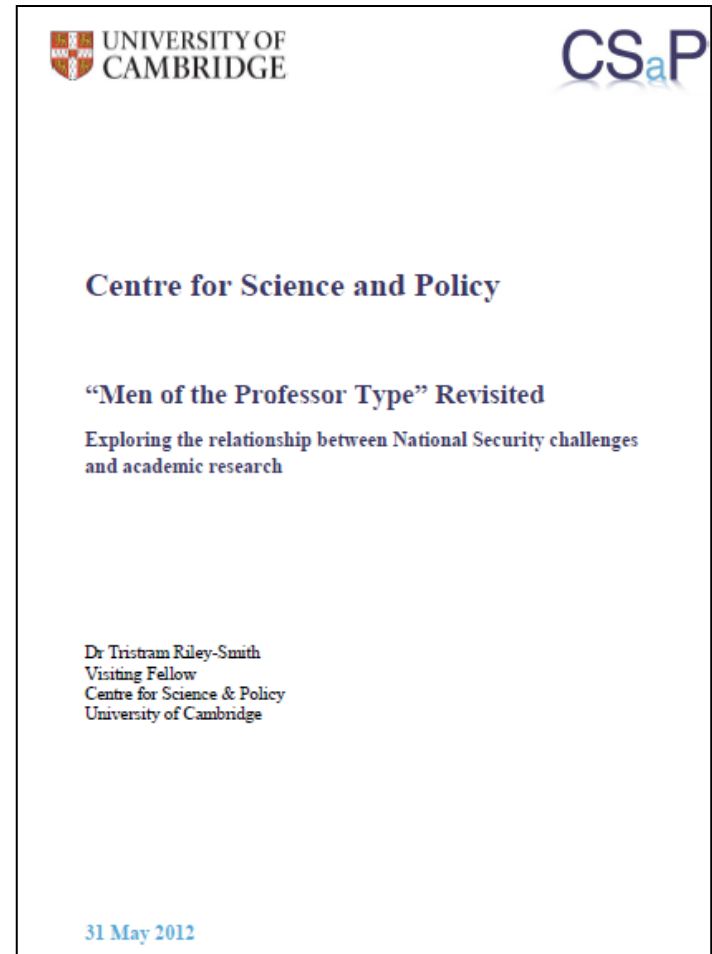
The CSaP Project: 76 Interviews

<i>Research Discipline</i>		<i>Behav'al & Social</i>	<i>Bio-science</i>	<i>Business</i>	<i>Chemistry/ Materials</i>	<i>Computer Science</i>	<i>Engineering</i>	<i>Maths</i>
Academia	39	9	3	5	4	6	9	3
Industry	11	3	0	0	0	1	5	2
Total	50	12	3	5	4	7	14	5
<i>Government Departments</i>			<i>GO Science</i>	<i>Home Office</i>	<i>MOD</i>	<i>OCS IA</i>	<i>SIA</i>	
HMG	26		1	7	5	1	12	
Grand Total	76							

The Phase 1 Report

Key findings –

- Many instances of successful, often tactical, interaction but ...
- Cultural and logistical differences hamper effective engagement;
- We need to nurture relationships of trust;
- We need to accommodate and join up fundamental research and applied science and technology;
- We can experiment with practical mechanisms, and test strategic ideas, for achieving these goals.



Obstacles to Engagement

Clash of Cultures

Stereotypes around “Ivory Tower” academics and public servants devoted to saying “Yes Minister”.

Resources and Red Tape

Complaints about bureaucracy on both sides; and significant concern about the approach agencies take to commissioning research (“Fire and Forget” and a “Procurement Mind-Set”).

Trust and Communication

Issues of security/secrets constraining collaboration, with communications challenges of docking and translation.

10 Recommendations

5. Five prioritised work-streams are then selected for short-term action by the CSaP Fellow (pp 28-29). These will be pursued in the second phase of the Fellowship project, from July-December 2012. In summary:

i. NS Data Release Scheme Run a trial selecting sensitive data for managed release for research, addressing all obstacles (legal, technical, etc).	ii. Information on the Research-Base Work with RCUK to develop & promulgate guidance on how to access information about past & current research projects.
iii. Guidelines for IP/IPR Issue guidance on the use of IP and IPR following a review of working practices in NS Departments.	
iv. Knowledge Exchange Schemes Run a trial NS Fellowship Scheme (with visits to three universities). Explore options for Visiting Professorships.	v. NS Portal for Research Proposals Work with stakeholders to explore options for a gateway giving academic researchers access to NS end-users.

6. A further five strategic recommendations, intending long-term benefits, are made for consideration by senior stakeholders. (pp 29-30). In summary:

1. Research Centres Commission a strategic study into the merits of new NS Research Centres: identify factors behind success & failure of models, testing the vision against capability needs.	2. Accelerators & Incubators Work with the TSB on engagement with academic research partners & Tech Transfer teams to nurture the development of IP through SMEs and university-focused Accelerators, etc.
3. An Academic RISC Support proposals for an academic <i>GU Alliance</i> modelled on RISC, providing strategic engagement between academia, industry & HMG; proposals are made for early deliverables.	
4. NSC Associates Support knowledge exchange by establishing a multi-disciplinary academic network of <i>NSC Associates</i> who can respond to both strategic and operational requirements.	5. New Interface to Access the Research-Base Consider developing a state-of-the-art interface to provide access to databases (in RCUK, TSB, etc) on UK research, for all stakeholders, extended to cover the historical record.

Building Engagement

1. Improving Access & Visibility

Short-Term

Seeking out research and uncovering NS requirements.

Long-Term

Gateway to Research (GtR) and an Academic RISC.

- **Breaking news:**
 - GtR Trial goes live this week: <http://gtr.rcuk.ac.uk/>
 - *Feedback channels:*
 - the blog (<http://blogs.rcuk.ac.uk/category/gtr/>)
 - Email gateway@rcuk.ac.uk.

Conference Session I

We will explore ways of **improving visibility to the hidden corpus of NS requirements and challenges**, in order to help researchers shape their work.

- A presentation from **Phil Cavanagh** of GCHQ on the portal managed by CDE (the Centre for Defence Enterprise), focussing on a call -“Finding the Threat”, where MI5 and GCHQ worked with CDE to reach out to sources of innovation;
- A briefing from **Mark Phillips** (ADS) and **Chris Hankin** (Imperial) on the Security & Resilience Industry Suppliers’ Council (RISC), and the proposal to create an Academic RISC.

Building Engagement

2. Turning Research into Capabilities

Short-Term

Clear and consistent approach to IP/IPR

Long-Term

Pull-Through: Promoting NS Accelerators and Incubators.

Conference Session II

We address questions of “**pull-through**” and **Intellectual Property Rights (IPR)**, where the approach adopted by Government and Academia can appear confusing and uncertain.

We have linked up with a review commissioned by the IPO to run a health-check on the Lambert Tool-Kit (developed to support collaborative research between academia and industry);

- Presentation by **Elaine Eggington** (IP Pragmatics), the Independent Reviewer, on the Tool-Kit, allowing us to consider the relevance of the Tool-Kit to NS research challenges and to help the IPO review.

Building Engagement

3. Knowledge Exchange

Short-Term

Trial a National Security Fellowship Scheme: 3 Fellows meet over 40 academics.

Long-Term

Develop a programme to include NSC Associates, NS Fellows and NS *Professors of Practice*.

Conference Session III

We consider systems for establishing **face-to-face contact** between NS stakeholders and academic researchers in order to **build trust and exchange knowledge**. We seek your guidance on how to optimise such schemes, including the National Security Fellowships, NSC Associates and “professors of practice”.

- **TR-S** will report on the trial of a Fellowship Scheme with three officials meeting over 40 researchers, to discuss cyber-security questions.
- **Kevin**, will talk about his experience of being a National Security Fellow.

Building Engagement

4. Making Real Commitments

Short-Term

NS Data Release Feasibility Study.

Long-Term

Strategic Partnerships: e.g. NS Research Centres.

Conference Session IV

We focus on the **challenge of NS Data Release** to instigate a wider discussion about **strategic partnerships**.

Breakout groups will be invited to consider ways of demonstrating real commitment to collaborative research, including the development of Research Institutes and Centres of Excellence.

- **TR-S** will brief the conference on a feasibility study conducted with the help of one NS Agency and a group of leading researchers in speech technologies;
- **Vanessa Cuthill** (ESRC) will give a presentation on the conclusions of ADT (the Administrative Data Taskforce) which publishes its findings today (December 11th).

What Next?

Q1 2013

We will be submitting a report to the NSC (Officials) S&T Committee (and to the GU Strategic Advisory Group) to consider lessons and next steps.

Take-Aways?

We are inviting you to think about how you can maintain momentum and deliver improvements to engagement, through small, individual steps.

Questions?

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