Introduction

RAND Europe’s long-standing commitment to high-quality research and objective analysis remains a beacon through continued political and economic uncertainty in Europe and worldwide, helping policymakers cut through complexity and base decisions on evidence. With offices in Cambridge and Brussels, we are well placed to find solutions to critical, cross-cutting issues in a post-Brexit world. Our work is enriched by our constructive linkages with clients, collaborators, RAND Corporation colleagues and the communities we strive to serve through our research.

This year’s Spotlight highlights a selection of new research projects and initiatives as well as developing areas of expertise that demonstrate these relationships. Take, for example, our research collaboration with the Policy Institute at King’s College London and the University of Cambridge on a timely study that re-examines the British people’s preferences on Brexit. Or take the partnership, again with the University of Cambridge, to provide research and analysis for The Health Improvement Studies Institute (THIS Institute). In addition, our education practice has been enhanced by strong linkages with RAND Education and Labor, deepening our interdisciplinary capability. We’ve also strengthened our client base, for example helping the European Parliament work through complex policy challenges.

Through such collaborations, we learn from experience and use the insights gained to achieve better outcomes.

Behind our efforts lies RAND’s mission to help improve policy and decision making through research and analysis. We refreshed our values in 2018 to reaffirm those qualities that we believe to be the essence of our organisation – Quality, Objectivity, Collaboration, Service and Learning – which we strive to apply in everything we do.

Thank you for your interest and support.

Hans Pung, President
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European defence matters

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Deepening our expertise
Having voted to leave the EU in the 2016 EU referendum, two years on Britain still finds itself in a volatile and unpredictable environment. Policymakers on both sides of the British Parliament continue to argue about the future that Britons desire in a post-EU era. However, the referendum itself told us very little about people’s preferences for Britain’s future relationship with Europe.

This lack of clarity on what relationship British people really wanted with Europe was the basis for an innovative study in 2017 by RAND Europe, the Policy Institute at King’s College London and the University of Cambridge. That proof-of-concept study used ‘stated preference discrete choice experiments’, a Nobel-prize winning methodology, to quantify the British public’s preferences for Britain’s relationship with the EU in a post-Brexit world. Following the success of that pioneering work, we repeated the study in 2018 to see whether the political discourse and events of the previous year had an impact on people’s views and priorities. The result? We find that British people reject a no-deal option even more firmly in 2018 than they did in 2017, with the strongest single preference being for a ‘Norway-like’ deal that retains access to the Single Market.

Charlene Rohr specialises in choice modelling and was the RAND Europe research lead for this study.

British people reject a no-deal option even more firmly in 2018 than they did in 2017.
The experiments asked a representative sample of the general public to choose between different UK–EU relationship options, using various combinations of seven attributes:

- Freedom of movement for holidays
- Freedom of movement for work
- Contribution to the EU budget
- The ability to make free trade deals with countries outside the EU
- Access to the Single Market for goods
- Access to the Single Market for services
- Law-making sovereignty.

The options avoided the use of labels, such as Norway, Canada-plus, remain or ‘no deal’. Instead people were simply asked to assess the attributes and indicate which choice they would prefer. A crucial aspect to the experiment was that people had to make trade-offs – it is not possible to have all these potentially desirable attributes in one package. Another important aspect was the idea of reciprocity: constraints on freedom of movement for EU nationals would also apply to UK nationals.

Since 80 per cent of the people in the 2018 sample were also involved in the 2017 study, we were able to measure how their preferences had changed. The option most valued in the 2018 study was one that resembles membership of the European Economic Area (similar to a Norway-like deal). This option was chosen by 43 per cent of the sample, up from 38 per cent in 2017. It was more popular than remaining in the EU (25%), being in the Customs Union (11%) or a no-deal Brexit (22%).

An important counter-finding, however, was that while most of the public have shifted to prefer a ‘softer’ Brexit, support for ‘harder’ Brexit options has grown among voters with no formal educational qualifications. Compared with others, this group places less value on freedom of movement and more on sovereignty to allow the UK to make its own laws.

As Spotlight goes to print, the outcome of the Brexit debate remains uncertain. A ‘Norway-like’ option is increasingly mentioned in news reports of UK political discourse. That option, if pursued, would reflect what our study shows many British people would prefer.
Based on surveys of almost 1,000 members of the British public, who were asked to trade on different aspects of a possible agreement to exit the EU, we find that:

1. The **British public still want a close relationship with the EU**, with the most preferred option resembling membership of the EEA.

2. There has been a **softening of the type of relationship that Britons want** with the EU as well as an increase in the number of people who want to remain in the EU.

3. **Education level is important** in explaining the continued polarisation of views on the way forward for Brexit.

4. The value British people place on the proposals set out in the **Chequers plan is difficult to quantify** due to its lack of clarity on key issues of concern.

5. Should there be another referendum, the **options offered in a vote will significantly influence the outcome**.
Social media in Africa

A double-edged sword

The spread of social media in Africa has brought many economic and political benefits. It has also equipped terrorist groups with a low-cost tool for radicalisation and recruitment.

The United Nations Development Programme (UNDP) commissioned RAND Europe to explore social media use and online radicalisation in seven African countries, focusing on three of the most lethal Islamist militant groups worldwide: ISIL, al-Shabaab and Boko Haram. Drawing on primary Twitter data analysis, our findings confirmed that all three terrorist groups use social media and other online platforms to broadcast their messages, inspire followers and recruit new fighters. Of the three, ISIL has the most advanced online strategy and uses the widest range of platforms. The evidence suggests that these groups are increasingly shifting recruitment activities to private channels following account shutdowns on mainstream social media sites. While the use of specific online channels differs across groups, we found that the role of social media in the radicalisation process is often complemented by the ‘offline’ influences of family and peer networks.

The governments of the countries studied – Cameroon, Chad, Kenya, Nigeria, Somalia, Sudan and Uganda – are only now starting to recognise and respond to the issue of
online radicalisation. Bespoke national strategies will be needed to tackle it, along with counter-online-radicalisation programmes tailored to local contexts. Trusted institutional accounts are also important to share reliable news and counter damaging extremist content. Finally, individual governments should consider sharing lessons on ‘what works’ in countering online radicalisation, at national, regional and international levels.

The study was launched at UNDP’s Maendeleo Policy Forum in Ethiopia in November 2018, an event attended by UN representatives, African Union members and regional experts. The work has also been featured in a range of media outlets and highlighted by the World Economic Forum. Furthermore, informed by our study, the UNDP is now developing a communication toolkit for counter-extremism practitioners in the Horn of Africa.

ISIL, al-Shabaab and Boko Haram all use social media and other online platforms to broadcast their messages, inspire followers and recruit new fighters.

Kate Cox is a senior analyst at RAND Europe.
Ammonia
Why the big stink?

While levels of other air pollutants have declined, ammonia emissions in the UK have been rising since 2013. Agriculture accounts for 82 per cent of emissions, with ammonia released naturally from manure and slurry, and by applying manmade chemical fertilisers.

RAND Europe examined the evidence on the effects of agricultural ammonia emissions on biodiversity and human health, including potential costs to the economy, in collaboration with and funded by the Royal Society. We found that ammonia emissions do negatively affect biodiversity. Ammonia is one of the main...
sources of nitrogen pollution, which has a significant impact on plant species diversity and composition within affected habitats. There is less evidence on the impact of ammonia on animals and the wider ecosystem. However, herbivorous animals are susceptible to the effects of ammonia pollution on their food sources. Ammonia run-off in fresh water can also have toxic effects on aquatic animals.

Quantifying the economic impact of ammonia emissions on biodiversity is challenging, but a conservative estimate suggests that, when loss of biodiversity and human health impacts such as cardiovascular and respiratory problems are combined, the cost to the UK could exceed £700m per year by 2020 if no action is taken. The range of possible costs, based on literature estimates and available emissions projections, is between £580m and £16.5bn per year. Policy changes to reduce emissions will most likely require a mix of regulation, incentives and education to manage manure production, storage and spreading. Wider education and awareness-raising for the public and the retail sector on the importance and costs of ammonia reduction may also be needed, so that the full cost of these measures does not fall solely on the agricultural sector and/or government subsidies.

The project methodology was underpinned by new evidence synthesis principles, developed in collaboration with the Academy of Medical Sciences. The study served as a pilot, with RAND Europe staff spending time on-site to help the Royal Society build their capacity to apply the principles in practice.

If no action is taken to reduce ammonia emissions, the cost to the UK could exceed £700m per year by 2020.
EPIC

ways to tackle childhood deprivation

2018 saw the five-year anniversary of the European Commission Recommendation ‘Investing in Children – breaking the cycle of disadvantage’. In Europe, 20 million children still live at or below the poverty line. Investing in these children is investing in our future. But how can we know what works? Too often interventions are described as ‘good’ or ‘best’ practices without sufficient evidence that they actually have impact. With limited resources, governments and other bodies need to be sure they are investing in proven strategies.

Working together with the European Commission (EC), we have developed a rigorous evidence-based framework to evaluate and share evidence on what really works in child and family policy and practice. Created and maintained by RAND Europe, the EC’s online knowledge-sharing platform EPIC (the European Platform for Investing in Children) contains only policies and practices that have demonstrated their effectiveness through research. The strength of evidence depends on whether independent evaluation has taken place and how the evaluation was done.

A team of independent experts reviews the evidence supporting each practice submitted, against our stringent evaluation framework. A practice deemed evidence-based and robust
is assigned one of three evidence levels. An ‘emergent practice’ is one that meets the framework’s standards in ‘evidence of effectiveness’. A ‘promising practice’ is one that meets standards in ‘evidence of effectiveness’ and at least one of two other categories: ‘transferability’ to other contexts and/or ‘enduring impact’ over time. A ‘best practice’ – the gold standard for evidence-based intervention – is one that meets standards in all three categories.

Furthermore, EPIC features practices that have been developed recently, but that are innovative, promise desired change within an EPIC context and have potential for effectiveness.

This evidence-based review system distils out the practices with proven positive impact on children and families – those with the potential to break the cycle of childhood disadvantage and help people achieve their full potential.

We also summarise the research in ways that make it easy for practitioners and policymakers to use, and work to build awareness of strong practices, for example by providing practical guidelines on how to use the evidence for policymaking or implementation.

Axelle Devaux is a research leader at RAND Europe and leads the EPIC project
Drawing on EPIC research, RAND Europe has drafted a series of policy papers on child wellbeing topics in 2018, including:

- **Family-friendly workplaces.** With many people struggling to balance work and family obligations, this paper describes policies and initiatives that may help to increase flexibility in working hours and work locations.

- **Education for unaccompanied migrant children.** Over 260,000 unaccompanied minors applied for asylum in EU member states between 2010 and 2017. This paper outlines national and school-level approaches to inclusion of these children in education systems.

- **Paternity and parental leave.** All EU member states offer some form of paternity and/or parental leave, but there are wide variations in leave length, compensation and eligibility. This paper reviews current provision and the likely impact of the European Pillar of Social Rights.

- **Tackling child poverty and social exclusion in the EU.** An overview of the various funding mechanisms at EU level and how they can be used to fund initiatives to help all children reach their potential.

RAND Europe is proud to have been involved in an initiative as important as EPIC. We believe our rigorous evaluation of practices can help policymakers, practitioners and ultimately children and families across Europe, and that it would be beneficial to identify and promote evidence-based practices in other policy areas. The EPIC framework has the potential to be adapted and applied elsewhere to provide objective guidance on what genuinely improves outcomes.

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**How does the evaluation framework work?**

A team of independent experts reviews the evidence supporting each submitted practice against three criteria:

- **Evidence of effectiveness**
- **Transferability**
- **Enduring impact**

The practices are then assigned one of three evidence levels depending on which criteria they meet:

- **Emergent practice**
  - Meets the standards in evidence of effectiveness

- **Promising practice**
  - Meets standards in evidence of effectiveness and one of two other categories, transferability or enduring impact

- **Best practice**
  - Meets the standards in all three criteria
Focusing on EDUCATION

Education is regularly identified as a top priority for local and national policymakers, both as a crucial mechanism to build new skills in a fast-changing world and for its potential role in addressing wider societal issues such as health, inequality, crime and social mobility. Over the past three years RAND Europe’s Education group has built up a strong interdisciplinary team that conducts high-quality, policy-relevant research to inform more effective educational policies, programmes and practices.

Our biggest area of current work is conducting randomised controlled trials (RCTs) to evaluate the impact of different educational practices, spanning a range of ages and subjects. This is an exciting field with a lot of potential for policy. RCTs have long been considered the ‘gold standard’ for evaluations across medicine and agriculture; by applying the same strict controls and research disciplines to policy evaluation, we can provide the same high quality of evidence for education. We have been using RCTs to generate robust, objective evidence for the impact of well-known and widely used interventions. For example, we are carrying out a high-profile evaluation of Primary Science Quality Mark (PSQM), a whole school approach to improve science provision in primary schools, co-funded by the Education Endowment Foundation (EEF) and the Wellcome Trust. This will test the impact of PSQM on science attainment and on pupil and teacher attitudes towards science teaching and learning in 140 schools across England. We are also finalising a large-scale EEF evaluation of Accelerated Reader, a popular reading

“We have been using RCTs to generate robust, objective evidence for the impact of well-known and widely used interventions”

Elena Rosa Brown leads the education portfolio at RAND Europe
programme, and we are excited about our trial with Microsoft and Achievement for All, looking into the impact of Microsoft’s free reading software.

In addition to our trials, we have been working to add to the education evidence base using a variety of methodological approaches. We developed the TALIS Starting Strong Survey for the OECD, which is a valuable tool to help participating countries fill key data gaps on the professional development, working conditions and pedagogical practices of Early Childhood Education and Care educators. The project will help to inform discussions on the development of the teaching profession and identify improvement opportunities for early childhood learning and well-being across different countries. Another example is our work on the recently completed Campbell Collaboration systematic review, led by the Institute of Criminology at the University of Cambridge, which examines the impact of interventions to reduce exclusion from school. We have also expanded our international remit with recent projects including a review of Morocco’s approach to teacher appraisal and an international comparative study of science and maths teaching commissioned by the Royal Society.

Going forward, we are exploring new ways to leverage the outputs from our research and evaluation portfolio to increase their value for policymakers and practitioners. Possible options include briefings that draw together the findings from multiple different RAND evaluations, and extending in-depth analysis of particularly interesting datasets, such as our work on the teacher retention problem in and around Cambridge.
Expanding horizons for researchers
Many researchers travel or move around the world for work, whether in academia or the private sector, from PhD students onwards. Their ability to move freely may be helped or hindered by factors such as funding or visa requirements.

The Together Science Can campaign asked us to help them gain a better understanding of researchers’ experiences of travelling for work and how these vary internationally. The project followed on from RAND Europe research undertaken in 2017 on international mobility from a UK perspective, this time taking a global view.

We conducted an online survey covering 109 countries and nearly 2,500 researchers, who answered questions about travel patterns, relocation, enablers and obstacles they had experienced, and the perceived outcomes of their international moves. Three-quarters of respondents had relocated to another country for research purposes.

Nearly all researchers from all nationalities surveyed believe that international mobility is important for research – whether they themselves have moved for work or not. They feel strongly that international movement improves research outcomes by forging new collaborations and developing ideas, skills and expertise. There are concerns, however, about barriers to mobility. Family-related challenges are the most frequently cited obstacles to international relocation. Visa requirements may also limit mobility due to the time, complexity and cost of applying. Researchers from Asia and Africa are most likely to report visa-related challenges, especially for short visits. African and Asian researchers also rely more on independent funding than on funding from their own institutions. Finally, political developments – such as the UK’s decision to leave the EU and changes in the US political climate – and their possible impact on mobility are causing concern among researchers, due to their possible impact on mobility.

The results are being used by the Together Science Can campaign to address possible barriers to international travel and promote opportunities and benefits, so researchers can work better together in the future. Through this research RAND Europe is developing a robust evidence base on the factors that influence mobility in science and the outcomes it can help achieve.

Commonly reported outcomes of international mobility include:

- **80%** Formed new collaborations
- **80%** Developed new ideas
- **78%** Gained technical skills or expertise
- **64%** Published a paper
- **55%** Performed experiments or made observations
- **54%** Changed direction of research or research question
Protecting spectators and locals from violent or antisocial behaviour is a key responsibility for any country hosting a major sporting event. With Qatar set to host the 2022 FIFA World Cup, Qatar University commissioned RAND Europe to gather the available evidence on factors that are associated with disorder at football matches, as well as the effectiveness of different approaches to prevent it. The tournament will be the first time an event of this scale has been held in Qatar and the first time the World Cup has taken place in the Gulf region.

Our study is the first to draw together and critically assess the evidence on violent and antisocial behaviour at football matches, and we found a key evidence gap exists on the prevalence of the problem. While physical assaults, projectile throwing, vandalism and verbal aggression all happen, there is no publicly available information on how common or severe these incidents are.

We know a little more about the reasons why people may behave violently or antisocially. Alcohol consumption, team rivalries and thrill-seeking can all play a role. Situational and spatial factors, such as ease of movement within a venue, also affect crowd behaviour, though no single factor is responsible in all cases.

We identified a number of promising practices for preventing and tackling violent and antisocial behaviour, including use of CCTV cameras, mandatory fan transport to stadiums and restrictions on alcohol consumption. Intelligence-led policing and low-intensity approaches that seek to build cooperation with
fans through mutually respectful dialogue also appear promising. While these strategies lack conclusive proof of effectiveness, since little robust evaluation has yet taken place, they represent a good starting point for authorities planning sporting events.

As the first strategic study of football violence, our work makes an important contribution to the field. It provides an essential resource not just for Qatari planners, but for anyone hoping to host a safe and successful major sporting tournament.
The tragic and life-changing consequences for individuals who are physically and psychologically injured in terrorist attacks are only too clear. The wider and less tangible costs on the economy and society, however, are not so readily apparent. Yet better measuring these costs can deepen our understanding of the longer-term impacts of terrorism and inform decision making about investment in counter-terrorism measures.

The European Parliament commissioned RAND Europe to undertake a wide-ranging study to map EU action and cooperation in the fight against terrorism and estimate the potential costs and impacts of gaps and barriers.

Drawing on our in-house expertise on terrorism and econometric modelling, our researchers used data covering all 28 EU countries and calculated new, more comprehensive estimates of the cost of terrorism.

We estimate that the EU lost approximately €180 billion in GDP terms due to terrorism between 2004 and 2016. The UK (€43.7bn) and France (€43bn) suffered the highest economic losses in GDP terms, followed by Spain (€40.8bn) and Germany (€19.2bn).

Our analysis also shows that the negative impacts of terrorism on the well-being of a population are measurable. Effects on trade, foreign direct investment and tourism have been captured in previous analyses, but we found that terrorist attacks are associated with quantifiable reductions in life satisfaction, happiness, health and trust within communities and national political institutions. Quantifying such effects improves our understanding of the nature and extent of harm caused by terrorism, beyond the individual level.

At the same time, RAND Europe’s report takes into account costs that are not so easily quantified when weighing up EU counter-terrorism policy. Certain measures taken to combat terrorism have had a disproportionate impact on suspects and wider groups within society. Measures that fail to protect fundamental rights can themselves lead to costs, as well as being counterproductive.

The report includes potential policy options to reduce the possibility of terrorist attacks and subsequent negative economic costs. The assessment of these options takes into account their possible effectiveness as well as their implications for fundamental rights and freedoms.
We estimate that the EU lost approximately €180 billion in GDP terms due to terrorism between 2004 and 2016.

Marco Hafner is a senior economist at RAND Europe.
The impact of research from UK universities is assessed every few years to determine future funding allocations from government, using the Research Excellence Framework (REF). Research England asked RAND Europe to identify quantitative indicators of impact within 2014 REF impact case studies, and provide guidance on how to standardise these for potential use in the 2021 REF process. We adopted a mixed-methods approach using interviews, literature searches, text mining and qualitative analysis to identify suitable indicators. We then devised a style guide and guidance on specific indicators to help universities prepare their case studies and enable more accurate analysis of impact data.
Airpower plays an essential role in deterring and countering security threats in a fast-changing, uncertain world. Many European nations face upcoming decisions on how airpower will be delivered in future, as existing fleets of combat aircraft – many of them designed in the 1980s and 1990s – approach the end of their operational lives. To support the development of a new UK Combat Air Strategy to mark the centenary of the Royal Air Force, RAND Europe was commissioned to conduct a number of studies in 2018 considering the future of airpower out to 2040+. This research has helped the UK Ministry of Defence (MOD) to explore the ‘national value’ of combat air in terms of operational advantage, freedom of action, international influence, collaboration and economic prosperity, along with the implications of different options for the future of the sector. RAND Europe’s analysis was cited directly in the new Combat Air Strategy and described by the MOD’s Director of Strategic Programmes as ‘pivotal’ in helping inform its development.
European defence matters

The European Defence Agency (EDA) facilitates collaboration among participating EU member states and supports them in improving their defence capabilities. The EDA also takes a close interest in the sustainability of the European research and technology and defence industrial landscape.

RAND Europe has regularly been commissioned by the EDA to provide evidence-based analysis to support strategic decision making on key topics. Three recent projects illustrate the range and depth of our work.

**Identifying future capabilities.**
Over the past 18 months, RAND Europe has been working with the EDA to help them revise the Capability Development Plan, which outlines the military capabilities that participating Member States (pMS) will need in 2035 and beyond. The request for support came at a particularly important time, with the EU having recently adopted a more assertive role in the defence realm, as illustrated by the new EU Global Strategy and the launch of the European Defence Fund (EDF).

We employed a suite of methods to think systematically about future needs, including scenario development, strategic exercises, technology horizon-scanning and capability analysis. The work underlined the continuing relevance of key current capabilities, such as efficient and secure information-sharing tools, rapid decision making, effective civil–military cooperation and high levels of force mobility. However, while conventional assets will remain important, the need for cyberspace capabilities is expected to increase. We examined the ability of the European defence industrial base to integrate and leverage important enabling technologies, finding scope for more effective collaboration across sectors, industries and technologies. R&D programmes already exist for many of the identified enabling technologies, but tend not to be coordinated between different EDA pMS. Our analysis also showed that much of the investment and initiative in enabling technologies currently...
originates from the civilian – rather than defence – sector.

**Expanding cyber defence.** Complementing this broader work on future capabilities, RAND Europe conducted a landscaping study of EU military cyber defence capabilities in 2018. Building on a 2012 stocktake produced by a RAND Europe-led consortium, the study considered the current landscape of cyber defence capabilities, while assessing the impact of EDA and wider EU activities since 2012. The findings will inform emerging cyber defence policies and actions at both EU and pMS levels over the short and medium terms. Furthermore, the EDA asked RAND Europe to examine the cybersecurity labour market to identify good practice in recruiting and retaining cyber professionals. This market is highly competitive in Europe with a shortfall of people with necessary skills. We identified good practice initiatives spanning a range of countries and sectors which were designed to enhance the attractiveness of a career in defence for individuals with these hotly contested skills.

**Cooperating on armoured vehicles.** In support of its remit to identify and promote areas of collaboration, the EDA asked RAND Europe to examine the scope for collaboration to develop and support three types of armoured vehicles through their full life cycle: tracked, wheeled and protected transport vehicles. Despite the inevitable challenges of aligning requirements and specifications among European countries, we found that the current landscape offers several opportunities for greater cooperation across vehicle fleets, and across procurement and development programmes. The study identified five potential collaboration models that could offer financial, operational and strategic benefits compared with purely national efforts.

The political and economic context for European defence cooperation is changing rapidly, and the EDA will continue to play an important strategic role supporting pMS to adapt and build their capabilities. RAND Europe’s research is helping to inform key EDA policies in these uncertain times.

“**We found scope for more effective collaboration across sectors, industries and technologies**”

**Alexandra Hall** leads RAND Europe’s research on defence, security and infrastructure
Collaboration models for armoured vehicles

**Pooling and sharing of spare parts** — jointly managed pool of spare parts, from which the fleets of participating countries can be provisioned.

**Joint maintenance, repair and overhaul (MRO)** — complete overhaul of the vehicle performed at a fixed multinational facility.

**Joint modular upgrade** — joint development and procurement of a common system upgrade for the same vehicle or vehicle type.

**Joint off-the-shelf procurement** — joint purchase of a commercially available armoured vehicle with little or no modification to meet national-level requirements from the same industry supplier in a single, collaborative order.

**Joint platform development** — joint design, prototyping, testing and production of a new armoured vehicle platform.

**Benefits** of multinational collaboration may include cost savings for each participating country, due to increased economies of scale, shared investments and streamlined processes. It may also improve interoperability, trust and standardisation and provide opportunities for knowledge sharing and learning.

**Challenges** associated with developing and implementing multinational collaboration in armoured vehicles include difficulties in agreeing on requirements and configurations of vehicles, aligning MRO approaches and timelines, and divergent legal frameworks and economic interests. Importantly, collaboration may require relatively close armoured vehicle capability integration and an acceptance of at least some level of strategic dependence by the participating countries.
Collaborating to improve healthcare

Like other healthcare systems around the world, the UK’s National Health Service (NHS) is trying to meet the challenge of providing consistent high-quality and safe care while simultaneously meeting growing demand with increasingly constrained resources. Much time and effort has been invested in quality improvement efforts, but very often these are small, local projects that are difficult to scale. Without better evidence, improvement initiatives may be at risk of failing to deliver on their goals, producing limited patient benefit or wasting scarce resources.

The Healthcare Improvement Studies Institute (THIS Institute), recently established at the University of Cambridge and led by Professor Mary Dixon-Woods, presents a unique opportunity to strengthen the evidence base on how to improve healthcare delivery, quality and safety, patient experience and patient outcomes. Funded as a ten-year initiative by a leading UK independent charity, the Health Foundation, THIS Institute aims to create a large-scale scientific asset for the NHS that has widespread practical relevance.

RAND Europe is a key research partner in THIS Institute. Led by Dr Sonja Marjanovic, we are working with colleagues at THIS Institute on both rapid response and long-term projects to help address pressing challenges facing the healthcare system. Teams of RAND Europe experts are collaborating with academic researchers, NHS staff and patients to help generate practical, actionable evidence that can support sustainable improvements in healthcare service provision, as well as long-term patient benefit. We also seek to contribute to methodological innovation in improvement research.

Our work for THIS Institute spans a diverse range of topics. Some examples include:

- **Good practice for patient and public involvement and healthcare staff involvement with research** examines the most effective mechanisms for involving NHS staff, patients and the public in healthcare research in meaningful ways.

- **Contributing to safe maternity care** examines the diversity of social, cultural and organisational factors that need to be in place to support safe maternity care, and how they can be embedded in the healthcare system.

- **Examining governance and ethics approval processes for improvement evaluations** seeks to develop a framework that organisations can use to ensure a safe, ethical and efficient governance process for evaluating improvement interventions.

- **The use of citizen science and crowdsourcing methods in improvement research** explores how the experience and knowledge of a large and diverse pool of healthcare staff, patients, carers and the wider public can be mobilised to improve the quality and scale of evidence that informs service delivery.

- **The use of citizen science and crowdsourcing methods in improvement research** explores how the experience and knowledge of a large and diverse pool of healthcare staff, patients, carers and the wider public can be mobilised to improve the quality and scale of evidence that informs service delivery.
Creating the new Silk Road
The Silk Road trade route, travelled by Marco Polo in the thirteenth century, linked the two great civilisations of China in the east and Rome in the west. Goods and ideas were carried for thousands of miles in both directions. China’s Belt and Road Initiative (BRI) is an effort to create jointly built trade routes that emulate the ancient Silk Road by land and sea and promote regional cooperation across Asia, Europe and Africa. The BRI is a colossal project that will encompass 4.4 billion people (70 per cent of the world population) and 62 per cent of world GDP (around US$21 trillion).

So what are the challenges to achieving China’s BRI dream? One vital issue is connectivity. The BRI region suffers from less developed infrastructure than other regions which makes it harder to develop strong trading links. RAND Europe researchers set out to measure the impact that greater multimodal transport connectivity might have on multilateral trade and economic growth in countries and regions along the BRI. We found a positive and statistically significant relationship between improving transport infrastructure and connectivity and growing bilateral trade. Having a rail connection between trading partners has the largest impact on trade, boosting total exports in the BRI region by 2.8 per cent. This is followed by improvements in road density and transport service quality.

Given the massive level of investment proposed in BRI transport infrastructure, total trade volumes could increase both inside the BRI region and in countries outside it, including those in the EU (assuming the relationship is causal). The benefits could be even greater if countries and regions along the BRI route can coordinate their development plans so policies and infrastructure implementation are compatible.

“Having a rail connection between trading partners has the largest impact on trade”
Incentives to exercise

Should exercise be its own reward? The benefits of physical activity are well known, including a lower risk of hypertension, cardiovascular disease and diabetes, and improved mental health. Yet roughly one third of the global adult population does less physical activity than the minimum recommended by the World Health Organization.
The results of a multi-country RAND Europe study suggest that a certain type of financial reward may be more effective than other incentives in motivating people to boost their activity levels.

RAND Europe was commissioned by health insurance group Discovery to compare the impact of its two incentive schemes: a ‘gain-framed’ approach that tracked activity levels and awarded points to members when they reached certain thresholds (the Vitality Active Rewards programme), versus a ‘loss-framed’ two-year scheme that allowed members to buy an Apple Watch at a discounted upfront price. How much they then had to pay back per month depended on their monthly levels of exercise (Vitality Active Rewards with Apple Watch benefit). Provided their exercise levels were high enough, members would not have to pay back the full cost of their fitness tracker.

Using data from 422,643 Vitality programme members across the UK, US and South Africa, we found that members who took up the Apple Watch benefit increased their tracked activity levels by about 34 per cent on average, leading to an additional 4.8 days of activity per month. This is compared to the Vitality members who only participated in the Vitality Active Rewards gain-framed incentive programme.

The study also looked at exercise intensity, with activity categorised as light, standard or advanced intensity. We found that as well as activity levels rising overall, people also increased the amount of more intense exercise they did. The positive associations between the benefit and physical activity also persisted over time (at least over the 24-month repayment period for the Apple Watch).

These findings suggest that offering financial incentives may be a particularly effective way to tackle inactivity and sedentary lifestyles. This could have relevance when designing and promoting future health programmes to encourage people to be more active.
Refreshing our values

In 2018, RAND Europe staff took a fresh look at our values to ensure they convey what we believe to be the most important principles to guide and inspire organisational decisions and behaviours. Our Values Charter reflects what our work and organisation stand for, and the qualities that make RAND Europe a good place to work to produce high-quality research to benefit others.

**QUALITY**

We pursue excellence
- We apply the most rigorous standards to our work
- We take a holistic view of the problem-solving landscape
- We use innovative, multi-disciplinary approaches to yield fresh perspectives

**OBJECTIVITY**

We are independent and impartial
- We provide unbiased analysis and insights
- We apply constructive, critical thinking to the challenges we face
- We find and follow the best evidence wherever it leads

**COLLABORATION**

We are stronger through the power of partnerships
- We work as a team to achieve common goals, taking and sharing responsibility for success
- We are collegial: we combine our strengths and support one another
- We value diversity, and we seek out and respect the contributions of others

**SERVICE**

We serve the public good and those with whom we work
- We strive to have impact and make a difference to society and to our clients
- We honour our commitments to the organisation and one another
- We act with integrity

**LEARNING**

We always look for better ways to do things
- We use knowledge and insight to achieve better outcomes
- We continuously improve and learn from our experience
- We combine curiosity with an entrepreneurial outlook
Events in 2018

DISCUSSING TRUTH DECAY IN LONDON AND BRUSSELS

The RAND Corporation is conducting insightful research on ‘Truth Decay’ – a growing disregard for facts and the erosion of evidence in public debate – and what it means for American political and public discourse.

At our annual London reception in January, Michael D. Rich, President and CEO of the RAND Corporation, and co-author of the research, shared his thoughts and findings on Truth Decay with guests. He stressed that the concept threatens democracies in Europe as well as in the US, and is driven by factors such as cognitive bias, political polarisation, the changing information environment and lagging education systems.

We returned to this topic in May for the 10th anniversary celebration of our Brussels office, when a high-level panel, representing policy, media and legal perspectives, discussed the Truth Decay phenomenon and its implications in Europe. Constantijn van Oranje, the first head of RAND Europe’s Brussels Office, moderated the panel. Participants agreed that no silver bullet exists to solve the problem, and that providers and consumers of information within all sectors must be equally responsible for taking action to reverse the decay.

EXPLORING IDEAS IN CAMBRIDGE

Professor Jennifer Rubin, executive chair of the Economic and Social Research Council and previous Executive Vice President at RAND Europe, spoke at our annual summer reception in Cambridge about the UK Government’s commitment to use research and innovation to address society’s challenges.

In October, RAND Europe researchers Stijn Hoorens and Giacomo Persi Paoli kicked off Cambridge University’s 2018 Festival of Ideas with their lecture, ‘Shining a Light on the Dark Web’. They highlighted the size and scope of a hidden part of the internet that allows anonymous users to pursue illegal activities, such as selling drugs and weapons.

At the 2018 lecture of the Cambridge Centre for Health Services Research, Professor Trish Greenhalgh, a leading academic in primary health care, examined the state of patient and public involvement in research in the UK. CCHSR is a collaboration between the University of Cambridge and RAND Europe.
Our Council of Advisors

The members of our Council of Advisors bring a diversity of experience and depth of knowledge that helps enrich our work and extend our impact. Their achievements and personal distinctions often cut across different fields and sectors.

This year we appointed three new members who add yet more depth and breadth to the Council. Dawn Austwick is Chief Executive of The National Lottery Community Fund and previously headed the Esmée Fairbairn Foundation, a charity dedicated to improving lives and building vibrant communities. Sir Tom Phillips KCMG is Director of the Centre for the Study of Modern Slavery at St Mary’s University in the UK and a former senior British diplomat. As Director of the BBC Online Project, Jessica Cecil leads the BBC’s digital services. She has served in a variety of roles during her distinguished career at the BBC.

MEMBERS SERVING IN 2018/2019

Michael D. Rich (Chairman)
President and Chief Executive Officer, RAND Corporation

Paul Adamson OBE
Partner and Chairman, Forum Europe; Editor-in-Chief, E!Sharp

László Andor
Former Commissioner for Employment, Social Affairs & Inclusion, European Union

Dawn Austwick
Chief Executive, The National Lottery Community Fund

Carl Bildt
Former Prime Minister, Former Minister for Foreign Affairs, Sweden

Professor Dame Carol Black DBE FRCP FMedSci
Principal, Newnham College, University of Cambridge

Jessica Cecil
Director, BBC Online Project

Philippa Foster Back CBE
Director, Institute of Business Ethics

Máire Geoghegan-Quinn
Former Commissioner for Research, Innovation and Science, European Commission

Florian von Heintze
Deputy Editor-in-Chief, BILD

Susan Hitch
Director of International Relationships, The Listen Charity

Michael Hoffman
Chairman, Hoffman Ventures Limited

Professor David Howarth
Professor of Law and Public Policy, University of Cambridge

Gunvor Kronman
Chief Executive Officer, Hanasaari, the Swedish-Finnish Cultural Centre

Sir Tom Phillips KCMG
Director, Centre for the Study of Modern Slavery, St Mary’s University

Dr Gill Samuels CBE
Member, Council of University College London Trustee, Science Museum

Professor Sir Gregory Winter CBE FRS
Master, Trinity College, University of Cambridge

Emeritus

Sir John Boyd KCMG
Former Chairman, Asia House and Former Ambassador to Japan
| **PUBLIC SECTOR** | Arts and Humanities Research Council |
| British Business Bank | Brussels Intercommunal Transport Company (STIB) |
| Cambridgeshire and Peterborough CCG | Danish Ministry of Transport, Building, and Housing |
| Danish Road Directorate | Department of Health and Social Care (England) |
| Dutch Municipality of The Hague | Dutch Regional Mayors Agency |
| Eastern Academic Health Science Network | EC DG Employment, Social Affairs and Inclusion |
| EC DG Health and Food Safety | EC DG Justice and Consumers |
| EC DG Migration and Home Affairs | EC DG Research and Innovation |
| EC DG Communications Networks, Content and Technology | EC Joint Research Centre |
| Eurofound | European Agency for Safety and Health at Work (EU-OSHA) |
| European Centre for Disease Prevention and Control (ECDC) | European Centre for the Development of Vocational Training (CEDEFOP) |
| European Defence Agency | European Investment Bank |
| European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) | European Parliament |
| Food Standards Agency (FSA) | French Ministry of the Armed Forces |
| Frontex | Guy’s and St Thomas’ NHS Foundation Trust |
| Healthy London Partnership | High Speed Two Limited |
| Higher Education Funding Council for England | Highways England |
| Irish National Transport Authority | Medical Research Council |
| Metropolitan Police Service | Netherlands Ministry of Justice and Security |
| Netherlands Organisation for Scientific Research (NWO) | Norwegian Ministry of Education and Research |
| Public Health England | South London AHSN |
| The City of Copenhagen | The Research Council of Norway |
| Transport for London | UK Defence Science and Technology Laboratory |
| UK Department for Education | UK Department for International Development |
| UK Department for Transport | UK Department for Work and Pensions |
| UK Foreign and Commonwealth Office | UK Home Office |
| UK Ministry of Defence | UK Ministry of Housing, Communities and Local Government |
| UK National Audit Office | UK National Institute for Health Research |
| Welsh Government | West Midlands Combined Authority |
| Youth Justice Board for England and Wales |
Clients and collaborators

FOUNDATIONS AND UNIVERSITIES: Achievement for All | Activ’Action | Age UK | Anglia Ruskin University | Association of the British Pharmaceutical Industry | Benevolentia Foundation | Cambridge Ahead | Cancer Research UK | Corsham Institute | Council of Canadian Academies | Dance4Life | Development, Concepts and Doctrine Centre (DCDC) | Early Intervention Foundation | Education Endowment Foundation (EEF) | European Climate Foundation | FFT | Fondazione Giacomo Brodolini | Forces In Mind Trust | Institute for Employment Studies | Institute of Occupational Medicine (IOM) | International Centre for Social Franchising | Keele University | King’s College London | Learning and Work Institute | Local Government Association | London School of Hygiene & Tropical Medicine | MS Society | NIFU | NORFACE | Nottingham Trent University | Novo Nordisk Foundation | OECD | Office of Health Economics | Qatar University | Royal Hospital Chelsea | Royal Society | ScotCen Social Research | Swansea University | The Education University of Hong Kong | The Health Foundation | The Policy Institute at King’s College London | The Robertson Trust | The Royal Star & Garter Homes | The Saatchi Institute | Tommy’s | Trimbos Institute | UNDP in Africa | University of Birmingham | University of Bristol | University of Cambridge | University of Exeter | University of Hertfordshire | University of Kent | University of Manchester | University of Montreal | University of Oxford | University of Warwick | Versus Arthritis | VU Amsterdam | Wellcome Trust | World Bank Group | World Health Organization

PRIVATE SECTOR: Accent | AIA Group | Atkins | Berenschot Group | Catalyze Ltd | DAMVAD Analytics | Discovery | European Federation of Pharmaceutical Industries and Associations | EY | Ferring Pharmaceuticals | GlaxoSmithKline | GSMA | ICF | IFF Research | IMC Worldwide | Jacobs Engineering Group | KPMG | Microsoft | MOE | Mott MacDonald | Open Evidence | Optimity Advisors | Roche | Royal Mail | Southern Water | SYSTRA | Technopolis Group | Verdonck, Klooster and Associates | VitalityHealth | Which? | WSP Group
Deepening our expertise

Establishing a new research centre
Methodologies and tools exist that can help organisations narrow uncertainty about policymaking in the future. RAND Europe established a Centre for Futures and Foresight Studies (CFFS) to use futures and foresight techniques to help governments and others to visualise a range of different possible futures and reduce the risk of decision making. RAND Europe has applied these methods to address a wide range of policy challenges, from future defence capability requirements, to future transport scenarios, global food shortages and anti-microbial resistance.

Our current research agenda
The multidisciplinary nature of RAND Europe’s research and staff ensures innovative, high-quality work across a vast range of policy areas:

- Defence & security
- Drugs, policing & criminal justice
- Education
- Employment, social inclusion, population & migration
- Health & healthcare
- International development
- Science, technology & innovation
- Transport
- Wellbeing in the workplace

We employ robust and rigorous methods and capabilities, backed up by peer review, to ensure the integrity of all our research, including:

- Choice modelling & behavioural research
- Economics & econometrics
- Evaluation for better performance
- Gaming
- Randomised controlled trials

“Through the CFFS, we combine the depth of our methodological expertise in futures techniques with the breadth of our subject matter expertise in all policy domains.”

Giacomo Persi Paoli leads the Centre for Futures and Foresight Studies at RAND Europe
To view more about the research featured in Spotlight please visit: www.randeurope.org/spotlight2018-2019

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OUR MISSION

RAND Europe is a not-for-profit research organisation that helps to improve policy and decision making through research and analysis.

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