



F O R T H O U G H T

Developing a new relationship with risk

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Contents

1. About <i>For Thought</i>	3
2. Foreword	4
3. Established principles	5
4. Actions for developing a new relationship with risk	6
5. What we mean by risk	7
6. Risk reconsidered	8
7. Who was involved	17
8. Further reading	18

About *For Thought*

***For Thought* is a series of events and activities from the British Science Association and partners, which gives leaders from business, policy, science and civil society a platform to discuss the biggest issues of the day.**

At an online roundtable discussion, held on 23 November 2021, leaders from these arenas addressed our society's relationship with risk and considered what is required to develop a new relationship with risk post-pandemic that will help us combat the great threats on the horizon, such as climate change, an ageing population and new technologies.

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Foreword



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The UK's relationship with risk is complicated. Until the emergence of COVID-19, the country's horizon scanning-contingency planning systems were considered among the most sophisticated in the world. Yet in many crucial ways, the pandemic has shown that citizens, communities and organisations were not as well prepared as they could or should have been.

Much of the early risk communication during the pandemic was top-down. There were plans in place, but many elements of them failed to take into account vulnerable groups such as care home residents or the impact of increased global demand for personal protective equipment (PPE). Although there are already many well established principles to good risk assessment and communication, there is still much that can be improved. Across almost all settings, the pandemic has highlighted the urgent need for the UK to develop a new relationship with risk. Specifically, risk assessment and communication should support decision-making, not just help people understand decisions that have been made for them.

In the *For Thought* report [Build Better](#) (BSA, 2021), one of the areas highlighted for further thought centred on risk. With the support of Lloyd's Register Foundation and using this report as a springboard, *For Thought* convened an online roundtable discussion (November 2021) with key leaders in the field to explore what this new relationship with risk might look like from a broad societal point of view. How can risk literacy be improved, how can whole-systems thinking be integrated into future decision-making and how can the diversity of our society be harnessed to create greater resilience?

This document sets out many of the risk principles that are now considered well established – if not always implemented – and examines some of the key ambitions that could enable the development of a broader, more nuanced and ultimately more practical relationship with risk that will help address the many challenges we all face in the near future.

We hope that it is a useful and thought-provoking document.

Established principles

These are some of the key established principles considered vital to a healthy relationship with risk:

1. Communicators must be credible and embrace a wide range of formats and mediums through which to communicate effectively



2. Successful risk communication is two-way and requires a strong network of trusted and trustworthy intermediaries



3. Risk literacy and risk know-how must be accessible to all



4. Risk may also offer opportunities and these potential “upsides” are often overlooked



Actions for developing a new relationship with risk

To enable the development of a new, healthier public relationship with risk, a number of ambitions were outlined over the course of the roundtable discussion:

1. A longer-term approach is required to identify and plan for future “slow burn” risks, not just sudden shocks

2. We need a diversity of decision makers, not just a focus on how best to communicate with a diverse audience through diverse mediums

3. Decision makers need to be (and feel) empowered to make necessary but unpopular decisions

4. The UK National Risk Register needs to be more accessible – and more useful in giving practical guidance on risk – to the general public

What we mean by risk

“ It may be a probability, a consequence or a threat that blends likelihood and severity into an overall measure. It may be calculated analytically or felt emotionally. It may be quantified or unquantifiable.” (LRF, 2017)

Risk can mean different things to different people or organisations. Risks arise from both hazards (such as weather and accidents) and threats (such as cyber attacks). These uncertainties are future disruptive possibilities that we can envisage, but have no available evidence on which to base estimates of likelihood.

In this report we consider risk in a broad sense, incorporating technical and analytical definitions in a way that has meaning for the general public in the course of their daily lives.

RISK KNOW-HOW

Every decision we make requires a trade-off between the likely costs and benefits of action or inaction. Risk know-how is the idea of informed decision-making developed by Sense about Science that “can help communities navigate the information available and discuss risks in a constructive way, within a real-world context”.

By working with community groups around the world and leading figures in statistics and the social sciences who focus on risk literacy and risk communication, Sense about Science has developed a practical framework that has recently been published by Significance magazine (What is risk know-how?) and is available at www.riskknowhow.org.

Risk reconsidered

INTRODUCTION

In our everyday lives, we all make trade-offs, balancing one risk against another – usually for a perceived benefit to us or those that we care about. These risks could be as simple as crossing a busy road, cooking dinner or leaving home without a coat. But they may also be more complex, life-or-death decisions.

At the start of the pandemic, many healthcare workers had to weigh the potential risk to themselves against the need to help COVID-19 patients, elderly care home residents or other patients in urgent need such as pregnant women on maternity wards. Later on, the perceived risk to the health of younger children (and their teachers) was considered less important than the risk of lost learning. Balancing the risk to people's economic livelihoods and their health has also become an important consideration.

Although exceptional, the COVID-19 pandemic has brought the complexities of risk to the fore; all members of society have had to weigh-up risks to themselves and their community. Perhaps the most important personal risk assessment has been around whether or not to get vaccinated. Here, most individuals have weighed their perceived risk

of serious illness, dying from the disease or infecting loved ones, and the opportunities gained by accepting the job, against the published small risk of side effects and concluded that the former strongly outweigh the latter. For some people, however, disinformation about the vaccine that has spread through their trusted networks, or a lack of trust in authority figures has been influential.

These key strands of risk, uncertainty, threat, opportunity and trust form a complex nexus of competing factors that shape our understanding of responses to risk. Yet, as the world around us shifts, our understanding and engagement with a wide variety of risks must shift too.

THE FALLACY OF “RISKY” BEHAVIOUR

There can be no such thing as a risk-free life. Every decision comes with risk attached. Yet risk and reward are relative to each individual and their community. We tend to assume that if we can get the right factual information about risk to the right people, they will then make the “right” decision. The reality is more complicated. This is especially true where emotional responses to messaging are involved such as in the area of sexual health.

During the AIDS pandemic of the 1980s, many of the national risk messages were criticised for the way in which they portrayed LGBTQ+ communities and spread fear. However, at the time, there was a massive shift in behaviour, largely instigated by LGBTQ+ communities themselves. In 1983, for example, Michael Callen and Richard Berkowitz, two New York writers living with AIDS, published *How to Have Sex in an Epidemic*. The short pamphlet advocated safe sex long before it became a public health message.

We must acknowledge that what can seem like risky behaviour to one group may appear to be a rational decision to others who weigh the opportunities or benefits differently. By involving individuals and communities in the process of producing and spreading risk communication, we facilitate more informed, nuanced decision making as people better understand the risks.

COMMUNICATING RISK

At the start of the pandemic, top-down, centralised communication was particularly necessary and effective. The daily Downing Street briefings, for example, offered real-time updates to both press and public simultaneously especially through the active participation of experts, including the Government Chief Scientist and the Chief Medical Officer.

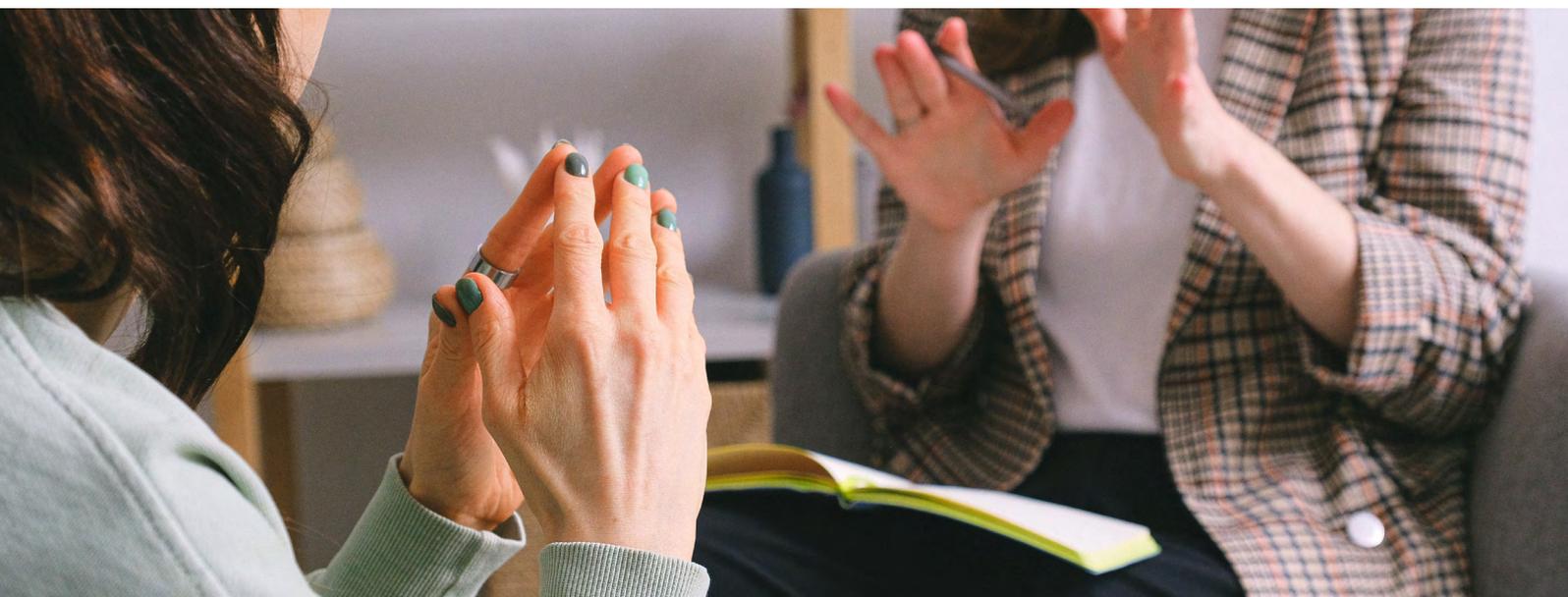
However, this form of one-way communication does not reach, involve, or engage everyone. One size does not fit all and we know that using multiple information channels to communicate in different formats (whether verbal, numerical, visual etc), and addressing a diversity of backgrounds, experiences, and points of view, allows for greater engagement. This is because, more usually, risk communication is transmitted in a cascade. Outside of an “emergency” situation such as a pandemic, the majority of the population consumes information indirectly, from multiple intermediaries such as the media, social media, friends, family, health professionals, teachers and so on.

When planning communication channels and formats, understanding where people go to support their assessment of risk – what Clare Moriarty, Chief Executive of Citizens Advice, calls “second opinion syndrome” – is vital. People can come to trusted sources for information to help them evaluate risk, but if the information doesn’t immediately fit with what they expected or hoped to hear they may go elsewhere for further information.

Expressing information around risk in various forms and through a multitude of channels reflects the ways in which people accumulate information. It is necessary to build a consensus of opinion across communication media – for example, the news media reporting official Government information accurately, and providing expert commentary supporting the message. Of course, these different communicators must be credible. Establishing a strong network of trusted and trustworthy intermediaries is critical in providing useful risk-based information and allows more people to engage and make more informed risk trade-offs.

With information percolating through multiple channels and being repeated by multiple intermediaries, combating misinformation is vital. Malicious attempts to sow false information must not be allowed to take hold through intermediaries or indirect sources.

Care must also be taken to avoid misunderstandings caused by language or lack of context which could lead to confusion in different audiences as the message is disseminated. For instance, when risks are communicated between professionals – whether in security briefings or in intergovernmental reports on



climate change, for example – words such as “likely” and “unlikely” are often used. In such circles “likely” has a defined meaning of equating to a probability of between 55% and 75%, to a broader audience it can mean something far more certain.

We must ensure that there is a greater understanding of risk, the language of risk and how best to make informed, rational decisions. This starts in school, by teaching children how to understand relative risk (such as riding a bicycle with and without a helmet). But also encompasses co-creation, where different audiences are involved in feeding into how risk is understood by different communities and then communicated. We need diversity of decision makers, not just a focus on how best to communicate with a diverse audience through diverse mediums. Those “in the room” involved in creating and designing the information in the first place must reflect the intended audiences. Not only will this lead to more effective communication, but to a more effective message. Only through working together can risk literacy and risk know-how be improved for the benefit of all.

THE BIGGER PICTURE: SHIFTING FROM THE INDIVIDUAL TO THE COLLECTIVE

While risks are often understood from a personal perspective, we need to shift the conversation from the individual towards the systems and structures that underpin our society. Many of the great risks that we face in coming years – climate change, ageing populations, data security – will impact us all. Our individual risk choices will affect others, they are not just a matter for us alone. To address these risks requires us to think and act collectively, and put in place whole systems that are built to withstand them.

This isn't always easy. Many of the most contentious elements of the response to COVID-19 have been where the rights and liberty of the individual have come up against those of the collective, such as lockdowns, mask-wearing and vaccination.

Climate change, too, brings into sharp relief the tension between the individual and the system. The Lloyd's Register Foundation [World Risk Poll](#) shows that 70% of the world's population recognise that climate change poses a threat to their country's safety. In one sense, this indicates a hugely successful communication of risk information. But the question remains: what are we going to do about it?

At COP26 in Glasgow, much of the discussion of risk associated with climate change – at least in the richer nations of the Global North – focused on the future and on future generations. Though these countries are currently experiencing an increased number of storms, floods and heatwaves, in the main life goes on very much as normal. Any immediate risk, certainly for many industries, lies in how to transition to a zero carbon economy without losing competitive advantage. This is not a luxury enjoyed by inhabitants of low-lying island nations or indigenous people in the Global South who see the risk as immediate and existential.

How do we communicate the risks, particularly to those with the money and power to act (both governments and populations), so that we shift the emphasis from an individualistic conception of risk to a community-minded one? How do we achieve this on a global scale, and adopt a whole system approach?

It is notable that in the public health efforts to curb smoking in the UK, the introduction of legislation banning smoking indoors in public spaces in 2007 was a tipping point. It shifted focus from the right of the individual to smoke (despite the associated health risks) towards the right of the community not to be exposed to the risks of second-hand smoke. The legislation did not prevent smokers from smoking, it just made it more inconvenient and consequently less appealing. And the effects of this policy are clear.

According to the “Impact of smokefree legislation in England” report (Department of Health, 2011), between 1996 and 2007, second-hand smoke exposure in children in England declined by nearly 70%. The greatest decline was in the two years before the legislation was introduced, possibly in response to nationwide media campaigns during this period highlighting the impacts of second-hand smoke. In the first year following the implementation of the legislation, there were 1,200 fewer emergency hospital admissions for heart attacks. And overall tobacco consumption among smokers fell. It also accelerated the decline in overall smokers: in 2006 – the year before the ban was introduced – 22% of adults smoked; in 2019 it was 14.1%.

The risk-reward trade-off for the community trumped the individual's personal trade-off. A new relationship with risk ought to focus on broadening this viewpoint and understanding the wider benefits associated with taking a whole systems approach to risk.

MITIGATING SLOW-BURN, LONG-TERM RISKS

Part of this whole system approach requires a longer-term view. In the UK, the National Risk Register (NRR) “outlines the key malicious and non-malicious risks that could affect the UK in the next two years, and provides resilience guidance for the public”.

When it comes to sudden impact external risks, such as natural disasters or terrorism, the UK has an effective framework in place with the Civil Contingencies Staff running the COBR system backed by the Civil Contingencies Act, and the local resilience fora that the Act mandates. The system often acquits itself well.

Yet identifying and addressing longer-term, slow-burn risks is another matter. Central government often seems to have a blind spot when it comes to recognising the risks inherent in the likely failures of

government policies to deliver national goals. This could include the benefits policy that leaves millions of families unable to make ends meet or the way regulation of markets leaves customers open to supplier failure. The fall of Kabul to the Taliban in August 2021 was a humiliating prime example of how a slow-burn risk that had been developing for years eventually came to a sudden head.

In terms of planning for such foreseeable events, the two-year time horizon of the NRR is simply too short. Instead, we need to invest in a more discursive, imaginative approach to forecasting possible futures of concern. By monitoring the present and recent past, applying the best scientific hypotheses consistent with the available data, testing approaches and estimating likely future outcomes on different assumptions, as SAGE and its sub-groups have done for COVID-19, we can identify and track slow-burn risks.

Then, by considering macro trends in technology, society and international development, we can plan potential mitigation strategies for the risks these trends may come to pose to us in the future.

China's huge investment in quantum computing and AI is a prime example. If we consider a future in which China applies its success in developing advanced quantum computing to the decryption of the cryptosystems that underpin secure data transmission on the internet, this would expose the UK (and many other nations) to Chinese surveillance (NATO Review, 2021). By exploring this potential future risk, we could then conclude that it would be wise to immediately increase investment in research into quantum resistant mathematical algorithms and monitor Chinese technology closely.

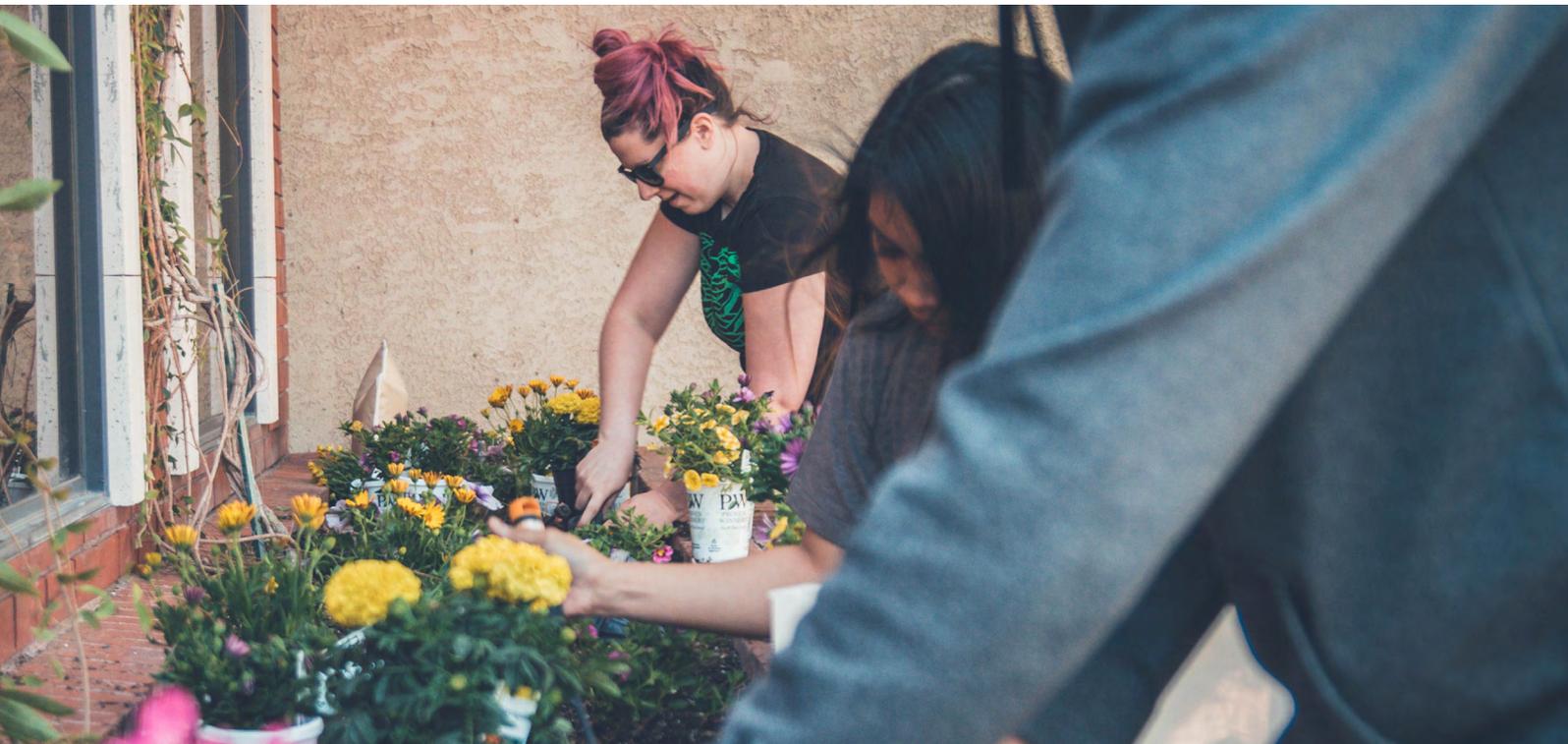


RISK AND RESILIENCE

Of course, it is not the risk register itself that is important, but what you do with this list of risks. The NRR is intended to provide “resilience guidance for the public”. However, whether many members of the public know it exists, where to find it and whether it applies to them is doubtful.

For years, a flu pandemic has been considered one of the most likely risks facing the UK. There have been high level discussions and even exercises with plans drawn up in government. Yet many of the recommendations from these exercises were not put in place or communicated effectively or urgently enough - we were not prepared.

Bringing more communities into the conversations around risk earlier in the process will help, but perhaps there should also be somewhere that the work and thinking around risk is presented in an accessible, user-friendly way. This would allow individuals, communities or businesses to better understand the risks they face from climate change or another pandemic, for example. It would also enable government departments to more fully consider the risks and benefits of policy decisions.



Much resilience planning is focused on the immediate physical impact of risks to national infrastructure. Although – as the pandemic has shown – the impact of a major shock often extends into other sectors of the economy, is felt by the whole of society and may last for a long time. Resilience, then, is not just about power grids, bridges, tunnels, ports and roads (the physical infrastructure of the country), but about the people living in it too. A resilient society is one that is ready and able to deal with sudden shocks and address slow-burn, longer-term risks.

By 2050, 70% of the world's population is expected to live in urban areas. This huge growth in cities will require a level of investment at almost unimaginable levels. To do this will require countries facing rapid urbanisation to adopt high-hazard new technologies which have inherent risks attached. Equally, climate change will increase pressure on populations around the world, pushing many into poverty and uprooting communities. Such rapid changes will pose a physical challenge, but also require major social resilience.

These risks, layered on top of each other, make drawing up plans for every contingency difficult or near impossible. But as General Eisenhower concluded as Supreme Allied Commander for the Normandy landings in 1944, "plans are worthless, but planning is everything". It is the act of planning, not the plans themselves, that has greatest value. Considering how best to build resilience and drawing more communities into the process of planning will become ever more critical.

WHAT DOES A NEW, HEALTHIER RELATIONSHIP WITH RISK LOOK LIKE?

It is easy to see the multitude of potential risks that we face now and in the future as overwhelming, with an endless list of obstacles to be overcome. However, there is much that we can do together to minimise any damaging effects of the dangers ahead.

We can provide greater, user-friendly access to risk information such as the NRR, develop resilience not just in infrastructure but within society and involve people from all areas of society in the discussion of risks. Likewise, we can increase the risk literacy and know-how of the population. We can create circles of trust that will radiate out from the centre, improving risk communication, planning, preparedness, understanding and decision making for all.

As the economist FH Knight wrote: “Without risk, there is no profit.” The sentiment is true for society as a whole – with risk comes opportunities. To fully embrace these risks and make the most of the opportunities they offer, we need to develop a new relationship with risk. One that is more nuanced, inclusive and focuses on the process of planning as much as on the plan itself.



Who was involved

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Professor Mandeep K. Dhami, Professor of Decision Psychology, Middlesex University London

Andy Green, Chair, Lowell Group | Commissioner, National Infrastructure Committee

Bahare Heywood, Chief Risk and Compliance Officer, Clifford Chance

Professor Dame Anne Johnson, Co-Director of UCL Health of the Public | President, Academy of Medical Sciences

Katherine Mathieson, Chief Executive, British Science Association

Dame Clare Moriarty DCB, Chief Executive, Citizens Advice | Chair, Health Foundation's COVID-19 impact inquiry

James O'Reilly, Chief Risk Officer, Provision and Functions, Bupa Group International

Professor Brooke Rogers OBE, Professor of Behavioural Science and Security, Department of War Studies at King's College

Dr Tim Slingsby, Director of Skills and Education at Lloyd's Register Foundation

Dr John Taylor, External member of the Bank of England's Prudential Regulation Committee | Chairperson of the Scottish Financial Risk Academy Group

Further reading

Anticipate, React, Recover: Resilient Infrastructure Systems (National Infrastructure Commission, 2020)

World Risk Poll (Lloyd's Register Foundation, 2019)

Public health: ethical issues (Nuffield Council on Bioethics, 2007)

Principles for co-production of guidance relating to the control of COVID-19 (2020)

Principles for the design of behavioural and social interventions (2020)

For Thought: Build better report (British Science Association, 2021)

Collaboration and risk communication to address complex challenges (British Science Association, 2019)

Shifting perceptions of risk: A guide to improving the understanding and communication of risk across society (British Science Association, 2018)

Foresight review on the public understanding of risk (Lloyd's Register Foundation, 2017)

Risk and Regulation Advisory Council reports (2008-2009)

Words or Numbers? Communicating Probability in Intelligence Analysis (American Psychologist, 2021)



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