Introduction

There are many different routes and pathways for academics to engage with and potentially influence policymakers. This guide sets out the various strategies or factors that you can take into account to increase your effectiveness when communicating with policymakers. This guide has been supported by the EPSRC so is aimed at researchers with expertise in engineering and science although the advice is equally applicable to any academic who may want to become more policy aware.

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Strategies for effective communication

An extensive body of literature emphasizes that the inaccessibility of ‘science’ can be an important barrier to knowledge exchange and impact between scientists and decision makers. It has been advocated that scientific evidence, and the experts who communicate, have to be seen as credible, relevant and legitimate by policy makers for the evidence to be considered in their deliberation. Therefore you must be seen to be free from bias and trust-worthy. How you make your research agenda and findings relevant to policy-making in a way that has an impact on how policy is designed or implemented will largely be dependent on how you communicate. There is no simple formula to make your communication count but there are strategies or factors that you can take into consideration to increase your effectiveness, listed below. A thread that weaves through all of this is the need to understand how policy makers’ process evidence and the environment or context in which they operate.

Increase your visibility

Establishing a strong online presence can help build your public profile and networks and increase your visibility, perceived credibility and legitimacy among policy people (i.e. civil servants or Members of Parliament). Using blogs and other forms of social media, like Twitter and LinkedIn, can be an effective and engaging way to reach a broad global audience. Social media provides academics with the means to connect with new audiences, such as decision makers and influencers, and to communicate directly with those who may have an interest in your area of expertise. Using social media can also help you increase awareness for and support of your work; build networks that can assist with amplifying your work and; keep you up to date with developments in your field.

As with any channel of communication though you need to think about how you might manage any potential risk to your reputation. Factor in how much you want to communicate, for example before being peer-reviewed; be aware of the dangers of prematurely revealing details of potential interventions or intellectual property; and consider issues of plagiarism. Likewise, policy makers need to trust your findings so build a reputation for objective, high quality research and be credible on-line. Regardless which tool you might use, ensuring you provide a consistent and up to date profile including affiliation, professional background, current research and publications, is also key.

There are many tools available on-line to help with increasing your visibility but as a minimum have a personal profile page embedded within your university web-page and/or a Google Scholar profile. A Google Scholar profile is a good way to showcase your research outputs and to track (Google) citations. Other popular options include a personal website or a blog.

Blogging

Writing a blog can help showcase the value and relevance of your area(s) of expertise and or/ research findings to a particular policy area. A blog provides an opportunity to communicate your research in a more informal way by translating more technical research findings into an engaging and accessible format for a non-specialist audience. Blogging also offers an effective way to disseminate and publicise research, although think of a blog as an initial output to further policy engagement or stimulate interest rather than an end in itself. Also be clear what your blog is for and how often you may want to blog. It might sound obvious but blog as yourself and be open and transparent about your academic position and whether you're writing on behalf of your University. Don't forget to tag your posts so they are categorised and improve the chances of being found by search engines. You can also use images to add interest. There are various websites that provide royalty free images for use such as Free Images or Unsplash and the British Library also has a lot of public domain images available for reuse.

➢ Get involved:
1. Before you start, think about what you are trying to achieve with your blog. Try summing up your goals in a sentence or two and write that down before you do anything else.
2. Established blogging platforms like WordPress and Blogger offer start-up blog sites for little or no outlay and have easy to use interfaces. In addition to, or instead of, having your own site there are reputable blog sites for academics such as the Bennett Institute for Public Policy, London School for Economics and Political Science (LSE) Impact Blog, The Conversation and Academia. Most of these also have large Twitter followings so can help to cross-promote blogging entries. Writing for an existing blog can prove particularly beneficial as they are more likely to have established audiences, including policy makers, as well as the means and tools to share your blog widely (e.g. via mailing lists or Twitter accounts).
3. To be effective, blogs should be short, (maximum of 1000 words), free of unnecessary

Get involved:

1. Get started by signing up to www.twitter.com and consult available guidance on how to maximize the use of Twitter. The ESRC has a helpful user-friendly guide on how to use Twitter to increase the visibility of your research network and keep up-to-date with subjects that are relevant to you. The LSE have also produced a short guide to using Twitter in university research and impact activities.

2. Strategically following prominent figures and relevant organisations is also an effective way to learn about the political landscape and potential events where relevant policy makers will be. This will ensure that an interested academic can keep abreast of the changing political landscape in which they seek to engage, as this is frequently cited as being an important first step to effective engagement in the science/policy literature.

3. Finally be wary of being lured into bad-tempered arguments or spats so think before you tweet and be respectful of others. Tone is important.

Make your work Open Access

Open Access means that a research output is free to access for any reader anywhere in the world making sure it is available to the widest possible audience. Various models have emerged to support open access publishing though the two primary ones are ‘Gold’ and ‘Green’. Gold open access is where the finished article is available immediately on publication (although generally you have to pay the publisher for this to happen). Green open access is where the post-peer review accepted manuscript, (not the proof or the publisher’s version), is archived in a repository and usually made available after an embargo period set by the publisher and no charges are paid. Open access publishing is particularly valued by parliamentary staff.

Framing your evidence

The way you present or frame your evidence can have a significant effect on how it is understood and whether it’s taken up by policy makers. Framing your evidence to ‘appeal to the biases, beliefs and priorities of policy makers’ can be an effective approach. Potential framing strategies could include: combing facts with emotional appeals; adapting to cognitive shortcuts by telling stories which can make it easier for policy makers to understand and connect to your message or bring your research to life and; producing a ‘policy solution’ that is feasible and exploit a time when policy makers have the opportunity to adopt it i.e. windows of opportunity. There is limited evidence on what type of ‘framing’ would work best in what circumstance, highlighting the critical need for more research on the relationship between evidence and...
In framing your evidence, though, consider how far you should go to be influential? Are you an honest broker or an issue advocate? An honest broker may simply disseminate their research neutrally, clearly and in a timely fashion so acting as a ‘honest broker’ of their evidence. An ‘issue advocate’ is more likely to recommend a specific policy option or describe the implications for policy based on their research.

- **Get involved:**
  1. You could consider framing your evidence by using established storytelling techniques to aid your communication with policy makers. Good stories can grip an audience and a compelling narrative can be ‘the primary means by which human beings order their social reality’.

Translating findings more effectively

Translating findings more effectively, (by writing blogs, see above, systematic reviews or policy briefs), can be an effective strategy to maximise your chance of policy impact. Policy makers often need timely and reliable access to summaries of the best available evidence to inform policy decisions. Producing a concise evidence synthesis or policy brief can also minimise cognitive burden and enable your audience to process information more efficiently.

**Evidence synthesis**

Evidence synthesis refers to the process of bringing together information and knowledge from a range of sources and disciplines to inform debate and decisions on a specific topic. Evidence synthesis can range from a full systematic review to the rapid drawing together of evidence which may be used to inform an emergency situation. Systematic reviews and evidence synthesis are considered particularly useful for time poor policy makers as they draw together a large amount of information and turn it into something concise and accessible.

Although producing high quality synthesis is a particular art often requiring ‘careful selection of the disciplines and sources of expertise, rigorous quality assurance, challenge mechanisms and intellectual independence’... Witness SAGE which adapts its disciplinary reach to different forms of emergency and in doing so accepts a policy question as a given. SAGE rapidly synthesis existing forms of knowledge to inform the policy question.

- **Get involved:**
  1. Take a look at the Parliamentary Office of Science and Technology (POST) briefings called POSTnote and POSTbrief for good examples on how evidence can be succinctly summarised. The former take three months to produce based on systematic literature and extensive peer review. The latter are based on strategic evidence syntheses produced in response to major developments in current affairs and can be produced in as little as one month. You could even propose a topic for a POSTnote or contribute to one. Get in touch with POST.

2. Also check out repositories such as the Cochrane Library and the Campbell Collaboration Library which are an excellent exemplar in turning synthesised evidence into reliable findings to inform decision-making. In addition the What Works Centres aim to provide robust evidence to shape decision-making and provide accessible and actionable syntheses of research and evidence.

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3. The Royal Society and The Academy of Medical Sciences have provided some helpful principles for good evidence synthesis for policy.

Policy briefs
Writing a policy brief is a way of getting your message across in a short jargon free format. A policy brief is a document which sets out a particular issue with implications for an area of public policy and makes recommendations as to the course of action to be taken. Policy briefings can seek to influence policy thinking and decision making by offering timely and accessible information. Briefs can be proactive or in response to a particular policy agenda or call for evidence. Briefs should be based on insights gained from your research and/or expertise. If you are being proactive then why is your brief timely now? For example you can get involved in agenda setting before any new policy decisions are taken by suggesting a Select Committee topic to Parliament. Timing can be critical as to whether you have impact or not. Also don’t assume submitting an evidence brief is an end in itself – your policy brief could be the starting point for further engagement or you may have already established a relationship with the person you are sending the policy brief to first.

➢ Get involved:
1. As with all forms of communication it’s important to know your audience and who you are targeting. This may sound simple but it’s crucial to get right. Find out who does what and where so you know who to target and tailor your style and content to suit the audience. Remember parliamentarians and government officials are often busy people working in a complex and fast paced environment with tight deadlines and often experiencing information overload. Think brevity and clarity: two pages is what you’re aiming for. Be clear and concise and avoid emotive or politicised language and explain why your research is relevant. Your audience may not necessarily be an expert in your field so avoid jargon and acronyms but don’t dumb down – you are communicating with intelligent people! And although you are aiming to write a brief in a user-friendly way – don’t do so at the expense of rigour or integrity.

2. Have a clear structure with an overview of your research with key points up front – if a policy maker was only to read this what can you communicate in an opening summary statement which if read in isolation would convey a working understanding of the issue? State what the aim of your brief is clearly at the outset – is it a summary of existing research, report findings, evidence synthesis?

Make it easy to read quickly by using headings and sub-headings to break up large blocks of text. Make it easy to navigate. Numbering paragraphs can also help break up text. Think about how you are presenting your evidence – use visual aids such as figures, charts or diagrams if appropriate and to help make your brief be more eye catching. Are there particular statistics that could really bring your research to life?

3. Think about the content you want to relay and what you are trying to achieve. Make it clear from the beginning how the information you are writing about relates to a policy problem or solution. What is the scope of your brief? – are you defining a problem, offering a general approach, making specific recommendations or a combination of things. Also ask yourself what outcome you are seeking and what you would like the recipient to do having considered your brief? Are there any cost or policy implications to what you are proposing? Provide context beyond your evidence if you can – think about what might be going on in the audiences’ world and what other competing priorities they may be dealing with. Don’t forget to be explicit about any caveats, methodological limitations or sources of information and be upfront about whether there is any scientific uncertainty and what the nature of that uncertainty is (see below).

4. Finally don’t forget to include your contact details, details of funders if relevant, relevant references (be transparent about any sources used), appendices if relevant although don’t assume these will be read – the brief must stand on its own, or endnotes and make sure your brief is dated. Provide links for interested readers to access more information, if relevant, such as a project website, blog or full research paper.

Communicating scientific uncertainty
Uncertainty is inherent to all scientific knowledge as rarely is research black or white but often shades of grey. Scientific uncertainty has been defined as relating to ‘the limitedness or even absence of scientific knowledge (i.e. data and information) that makes it difficult to assess the exact probability and possible outcomes of unwanted effects’\(^7\). But how do you communicate scientific uncertainty to policy makers?

Communicating scientific uncertainty requires 'good governance of evidence'\textsuperscript{18} and a willingness to be open about uncertainty. It's a tricky balance but being able to communicate uncertainty honestly and transparently could actually help gain trust and credibility - both qualities of which have been demonstrated to foster more effective policy engagement\textsuperscript{19}. Cairney et al. make it an explicit component of their advice on how academics can influence policy that producing high quality research should include being able to communicate scientific uncertainty and the strengths and weaknesses of a piece of research\textsuperscript{20}. It's also been suggested that knowledge brokerage might be useful in areas of high scientific uncertainty as this requires the ability to order and translate knowledge effectively – an area where in which knowledge brokers can excel\textsuperscript{21}.

The Winton Centre for Risk and Evidence Communication has developed a useful framework for uncertainty communication. This comprises of three objects of uncertainty – facts, numbers and science – and two levels of uncertainty: direct (which relates to uncertainty about the fact, number or hypothesis) and indirect (which relates to uncertainty in terms of the quality of the underlying knowledge that forms a basis for any claims about the fact, number or hypothesis). However, having reviewed the limited literature about the effects of communicating epistemic uncertainty they acknowledge that uncertainty communication appears to be a 'science in its infancy'. Similarly, the European Food Safety Authority\textsuperscript{22} found that the available experimental evidence on the communication of uncertainty was limited and additional reasoning was needed to develop practical guidance. They concluded that further research would be needed to evaluate the performance of the approaches they recommend and to refine them in future, where needed. For example despite using various means to express uncertainty – multiple studies have shown that people still interpret the Intergovernmental Panel on Climate Change (IPCC) verbal likelihood terms in different ways. An experiment has found that this can be reduced by presenting verbal and numerical expressions together (e.g. 'likely (66 – 100% probability)') and is a more effective way to communicate the risks of climate change\textsuperscript{23}.

1. Ironically given the uncertainty about communicating scientific uncertainty you may be wondering where to start but the Winton Centre have provided some excellent pointers to communicate uncertainty taking into account factors such as: what you are uncertain about; why you think there is uncertainty and; to choose an expression of your uncertainties that suits the degree of precision you have. Of most importance they emphasise that you should 'keep your expressions of the magnitude of uncertainty clearly separate from the magnitude of any evidence you are trying to communicate'. They have also carried out extensive empirical work in this area so are definitely worth checking out for an authoritative take on communicating uncertainty.

2. Professor Sir David Spiegelhalter has also reviewed a wide range of techniques used to communicate risk and uncertainty information. He reported that only tentative conclusions could be drawn, and has offered cautious recommendations on general issues, the communication of numerical risks, and visualisations. These recommendations are helpful to consider though if you are grappling with the challenge of uncertainty communication\textsuperscript{24}.

3. In addition the Science Advice for Policy by European Academies have recently undertaken an evidence review in this area and concluded that scientific uncertainty can be communicated effectively by characterising, assessing and conveying the limits of scientific statements clearly. In particular they point to the need to ensure that policymakers understand the meaning of probability distributions, confidence intervals and statistical quality criteria when interpreting uncertainty characterisations. To aid with this and the use of data visuals it is worth reading the Government Statistical Science guide on communicating uncertainty.

\textsuperscript{18} https://www.ingentaconnect.com/content/tpp/ep/2016/00000012/00000004/art00007
\textsuperscript{19} Oliver, K. & Cairney, P. (2019). The dos and don'ts of influencing policy: A systematic review of advice to academics. Palgrave Communications, 5(21)
\textsuperscript{20} ibid.
\textsuperscript{22} European Food Safety Authority (2019). Guidance on Communication of Uncertainty in Scientific Assessments. EFSA Journal, 17(1).