Engaging people with environmental science

by Dr Penny Fidler, CEO of ASDC

The vision of Operation Earth is to inspire families and children with the amazing stories and science of NERC's world-leading research.

Within this programme, there are several areas we know that people find contentious, especially around climate and carbon reduction. Psychologists and behavioural scientists have been exploring the way people think around climate change, how we form views and opinions and how this influences the decisions we make and our behaviour. Below is a brief summary from what is a vast field of research.

Two ways of thinking

Most neuroscientists and neuropsychologists would say there are two types of thinking:

1. By intuition; this is automatic, shaped by your experiences, and feels right.
2. By reasoning; this is controlled, and allows us to think analytically about the future.

To be clear this is not rational versus irrational, nor is it emotional versus rational. Both operate together and most commonly intuitions come first and reasoning comes second. Indeed, it is very difficult to make everyday decisions without intuition. For example, people with frontal cortex damage find making decisions on relatively simple things, enormously difficult even though they can rationalise well and their analytical reasoning skills remain intact.

Rationalising our decisions

The evidence shows that we often make decisions, and then rationalise them afterwards. Importantly, we are rarely aware we have done this. When we are asked why we made a decision we will often give a plausible explanation, although the evidence reveals this is often not the reason we made the decision in the first place.

Staying Positive

The evidence shows that staying positive about the issues is very important, and offering solutions and options to engage is far better than giving all the problems. The focus of this programme is about the science and the scientists and how their research is helping us understand our changing world. Include positive stories where humans working together have provided the solutions. For example, environmental research revealed a hole in the ozone layer, the solution was fairly simple and politicians legislated to reduce the ozone hole. More recently, the UK Government has announced it will ban some neonicotinoids in the UK to reduce the impact on bees.

Cognitive Dissonance

When talking about climate change or environmental issues with people, always consider where they are coming from and the effects of cognitive dissonance.

Cognitive dissonance occurs in us all when something we do (a behaviour) conflicts with a belief about ourselves as a person. When the two do not match up, it creates such a feeling of mental discomfort that it needs to be remedied.

We make this remedy by either changing our behaviour, or by changing our attitude or beliefs in some way. For example, if you eat beef and enjoy it, it is easy to believe that the animals are kept well and the impact on the planet is small, even though this is not what the evidence shows. Another example would be if you fly regularly, you might seek to minimise your behaviour by saying that you recycle, to retain your pro-environmental view of yourself.

It also means that when you offer new ideas to someone (for example, that cars and flights increase carbon) and this conflicts with that person's belief about themselves (I am a good and responsible citizen), they may be highly motivated to fend off these new conflicting ideas, feeling the new idea is untrue.

Cognitive dissonance can also manifest with people thinking 'if the global issue was really this bad, Government would have done something big. They haven't, therefore the issue must be small'.

The risk of stealth

As humans, we are rather sophisticated at detecting when someone is trying to change our opinion or manipulate us. Aiming to talk about climate science and carbon by stealth is to be avoided. Once someone feels another person is trying to manipulate them, has an undeclared motive or persuade them by stealth, they will assign ulterior motives to that person.

The myth that changing minds changes behaviours

The evidence shows this changing someone's mind does not necessarily change their behaviour. This programme is not of course aiming to change behaviour, but it is good to be aware that the evidence reveals that making the new behaviour easier has a much stronger correlation with people changing behaviour, than changing their minds.

Scientific evidence and policy

Scientists investigate an area of environmental science and produce evidence that explains what is happening in our natural world. Elected policy makers and the public together are the ones who must decide what society should do. Sometimes, because people don't want to make the changes, the only option available to them is to make the science wrong. Try to work with people to show what the science is and what is policy, and unlink the two.

Following the crowd

When talking about environmental topics, remember that humans, without realising it, tend to follow the herd. It appears we all just want to do what others do, even though most of us would disagree with this. It makes sense that as social creatures we have evolved to want to fit in.

For example, missed appointments in the NHS cost the NHS around £700 million each year with up to 6 million appointments missed. However telling people this normalises the behaviour and increases the number of appointments missed. Simply by changing the posters so they say how many attended their appointments in the previous months cut missed appointments by 31%. Always celebrate the success story, so that fitting in is being part of the solution.

Likewise, the sign in a hotel room asking people to reuse their towels to save resources is fairly effective. However, just by adding to the sign that the majority of people staying in that room had reused their towels, increases the reuse by a further 33%.

Nudging: Does it work?

The two examples above of altering people's decisions and behaviour through changing subtle cues in the message is called 'nudging'. This works well if the new behaviour is easy. But less well if the change is effortful.

For example simply changing the shape and placing of your recycling bins can hugely increase what people will recycle. Telling people that only a small percentage of people currently recycle and you aim to increase this, will however, have the opposite effect.

Books and further reading

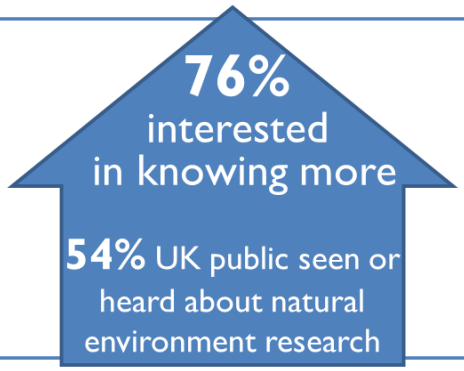
- What we think about when we try not to think about Global Warming by Per Espen Stoknes (a copy of this book has been given to each science centre).
- Mistakes were made but not by me by Carol Tavris and Elliot Aronson
- Sustainability, 'Us' and 'Them' https://www.academia.edu/22107386/Sustainability_Us_and_Them_
- http://www.ucl.ac.uk/public-policy/for-policy-professionals/commissions/communicating-climate-science.pdf (co-authored by Dr Kris de Meyer, see Chapter 2)
- www.climatefeedback.org for the latest climate information This website analyses news articles about climate change, and gives them a reliability rating. Recommended if you need to know the status of a particular article.
- Podcast 'A paid climate skeptic switches sides' http://www.reckonings.show/episodes/17
- Film about entrenched views and changing minds (co-produced by Kris De Meyer): http:rightbetween.com

NERC Public Insight Research

The Research Councils including NERC recently commissioned ComRes to look at UK public attitudes to environmental science. The findings demonstrate a strong public appetite for information about the work of NERC, and give a clear mandate for the research community to be the voice of those findings. Some project highlights are summarised below:

- University academics and researchers are the **most trusted source** of information about research.
- **84%** UK public support public funding of research and think it benefits them personally.

% UK public trust in information source



- Environmental research one of the topics people spontaneously bring up when they think about research.
- Interest in environmental research increases when perceived to **affect people's lives**.

The RCUK survey is available here. The NERC survey is the annex to the NERC Public Engagement call.

Key Audiences

Following the Research Councils UK (RCUK) 'Public Insight Research March 2017' the following five types of audience were identified:

Establishment Advocates who make up 25% of the UK population, and combine high levels of engagement with research, support for public funding, and high levels of trust in a range of establishment figures, such as Government officials and businesses, as well as being open to conducting "research for research's sake".

Idealistic Advocates, who make up 19% of UK adults and combine relatively high levels of engagement and support for public funding with scepticism of big business and a desire to see research deliver positive social outcomes such as solutions to climate change and global poverty.

Pragmatic Neutrals, who make up almost a quarter of the public (22%). This group has generally low interest in research and do not come across it much in their day-to-day lives. But while being slightly hesitant towards research, they will generally support it if they think it can have positive real-world outcomes, such as new dietary and health advice or improved medical treatments.

Traditionalist Sceptics, who make up 18% of the population, are the segment of the population most sceptical of research - despite coming across it relatively frequently in their day-to-day lives. The majority still support public funding of research, but would rather see it focussed on delivering economic and medical benefits to the UK rather than being focussed on wider international issues like global poverty or climate change.

Disengaged and Disinterested who make up 16% and have extremely low engagement with research, either through the media or discussing it with friends and family. They generally have low levels of interest in research and are suspicious of most organisations, in particular figures of authority.