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| What impact do climate change misinformation and disinformation have? |
| Meeting note from roundtable chaired by Angela McLean, Government Chief Scientific Adviser |
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Note on definitions: **Misinformation is defined as false or out of context information that is presented as fact, regardless of an intent to deceive. Disinformation is defined as a type of misinformation that is intentionally false and intended to deceive or mislead.**

Key points

- While there is correlational evidence associating individual behavioural change with misinformation – some quantifiable – evidence for causation is sparse.
- The extent to which individuals act on accurate information is also unclear.
- Behaviours are the result of multiple drivers.
- Audio-visual misinformation, including voice cloning and doctored images/footage, could be harder to detect and combat than textual misinformation.
- Research into climate misinformation – including randomised control trials and modelling – has found effects including reduced climate literacy, greater polarisation and impacts on how climate scientists work and communicate with the public.
- In the UK, denial of climate science is no longer a serious issue. The challenge of mis- and disinformation lies now in distorting discussion of climate solutions.
- The UK media has moved past attempting to present a (false) balanced argument regarding climate change, but it continues to give a voice to unscientific views on issues such as heat pumps.
- Misinformation is a complex issue. Interventions are at risk of backfiring in the absence of multi-disciplinary approaches, careful testing, and evaluation.
- There is value in the public understanding the fundamental techniques of disinformation through educational programmes.
- When misinformation is perceived to be legitimised by political leaders and authority figures, for example following "Climategate," public trust in climate policy can be damaged.
- Social media can highlight and use perceived hypocritical behaviour by political leaders and officials, such as by flying frequently, to bolster the justification for individual inaction.
- There is value in public dialogue and deliberation on climate and net zero. There has been a high level of public trust in the recommendations made by citizen assemblies in Ireland.

1. Evidence for the impact of misinformation and disinformation

- Misinformation and disinformation have been used by various movements and are associated with a range of harms including violence and vandalism (e.g. invasion of US Congress in 2021, attacks on 5G masts during the pandemic, threats against climate scientists accused of geo-engineering extreme weather).
- While there is correlational evidence associating individual behavioural change with misinformation – some quantifiable – evidence for causation is sparse.
- The extent to which individuals act on accurate information is also unclear. Behaviours are the result of multiple drivers, including pre-existing beliefs, cultural/religious values, education and where one lives.

- The clearest evidence for causation between misinformation and behaviour change relates to vaccine hesitancy/refusal.
- Much of the research into misinformation has been conducted in the West and has been limited to particular socio-economic groups. Caution is needed around the applicability of this research, especially from the US, to other countries or groups.
- Misinformation needs a susceptible host. Susceptibility varies. Those with pre-existing beliefs are more susceptible to information which reinforces those beliefs.
- The effect of repeated exposure to misinformation is much greater than that of a single exposure.
- It is important not to regard as irrational or otherwise demonise those who believe misinformation. People may have legitimate grievances which can develop into more extreme beliefs, making them more susceptible to mis- and disinformation.

2. Potential effects of advances in AI on misinformation

- AI applications have the potential to flood the public sphere with good as well as bad information. There is potential to use AI to disseminate accurate information.
- AI applications, such as ChatGPT, are adept at aping human conversational styles, which can serve to make misinformation more plausible and compelling.
- Audio-visual misinformation, including voice cloning and doctored images/footage, could be harder to detect and combat than textual misinformation.

3. Misinformation, disinformation, and the climate

- There are legitimate debates to be had on areas of climate science and solutions to climate change. Scepticism is not, in and of itself, misinformation.
- Resistance to policies or ideas on any topic should not be reductively attributed to misinformation. It is important to understand the broader context behind individuals' motives and actions.
- Misinformation is one method for interest groups to propagate climate change resistance. Misinformation used in conjunction with other methods can negatively affect policy adoption.
- Research into climate misinformation – including randomised control trials and modelling – has found effects including reduced climate literacy, greater polarisation and impacts on how climate scientists work and communicate with the public.
- As noted, it is hard to prove causation with respect to behavioural effects amid a range of potential external factors.
- In the UK, public concern about climate is increasing. Denial of climate science is no longer a serious issue.
- Research indicates that people recognise the gravity of climate change but do not think their actions alone are enough to resolve the issue.
- There is a lack of trust in government, which can create an environment ripe for misinformation.
- Scientists and engineers have high levels of public trust in the UK.
- The challenge from mis- and disinformation lies now in distortion of discussions of climate solutions.

- Social and mainstream media discussion of issues such as heat pumps and low traffic neighbourhoods in the UK has featured misinformation and contributed to a discourse favouring delays on climate action. But, as noted, it is hard to determine the relative contributions of misinformation to the observed outcomes.
- The UK media has moved past attempting to present a balanced argument regarding climate change, which gave voice to climate deniers, but some outlets continue to give voice to unscientific views on second order issues such as heat pumps.
- Climate misinformation peaks during key events, for instance following publication of IPCC reports.
- Hypocrisy is a key theme of climate debate on social media – for example, political leaders and government officials flying to climate summits. Such messaging contributes to arguments for individual inaction.
- Other narratives can also misguide the public's understanding of how individuals can take meaningful climate action, such as the disputed notion that recycling can help significantly to tackle global carbon emissions.
- Climate disinformation narratives are increasingly connected to other narratives or protests, for example claims that 15-minute cities aim to increase control of individuals by government.

4. Potential mitigations

- Misinformation is a complex issue. Interventions are at risk of backfiring in the absence of multi-disciplinary approaches, careful testing, and evaluation – as well as attention to context.
- Replicable lab tests have shown that both fact-based correction and logic-based correction programmes can be effective to counter misinformation, but that logic-based programmes, such as games, are more effective. There is value in the public understanding the fundamental techniques of disinformation.
- When considering the public acceptance of climate policy, it can be unhelpful if citizens feel overwhelmed by the complexity of the evidence and potential solutions. It is important to communicate the extent of change needed and the reasons for it.
- Interventions seeking positive behavioural change outcomes may backfire without proper understanding of the context in which public attitudes are formulated.
- Public dialogue exercises suggest people are looking for government leadership – in the form of action rather than provision of more information.
- Messaging from political leaders remains important. Misinformation is legitimised if perpetuated by politicians, which can be very damaging e.g. following the Climategate incident.
- There is value and trust in public dialogue and deliberation. Citizen assemblies in Ireland were effective at communicating the need for change.

Participants

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