Cambridge Zero Research Symposium 3
Behavioural Change & Education: tackling misinformation and promoting institutional and individual action
Monday 21st November, Pavilion Room, Hughes Hall

12.00pm   **Lunch**

12.50pm   **Keynote – Large scale behaviour change in politically polarized times**
Lee De Wit, Associate Professor, Department of Psychology

In their 2021 article "Changing behaviour for net zero 2050" Marteau, Chater and Garnett make clear that the scale of behaviour change needed will require large scale structural changes to people's environments to ensure that physical, economic and social cues reinforce and maintain pro-environmental behaviours. Governments therefore need to undertake such substantive changes, that we also need to consider the democratic process by which such changes might be supported. In an international survey with YouGov in the run up to COP26 in 2021 we found that a vast majority of people support "all governments" taking action to protect the environment (Buchanan et al., 2022). We also found this support could be increased slightly with messages focusing on public health and patriotism. When it comes to the details of what government action might mean in a given country however, there can be substantial resistance to things like congestion charges or low traffic neighbourhoods. Indeed the UK governments seems very reluctant to discuss the idea that meat consumption might need to be reduced. If governments are going to feel able to make these changes, they will need to be able to meaningfully communicate across polarized political divides at a time when trust in democracy has substantially reduced around the world. This talk will discuss some of the challenges and opportunities in trying to ensure public support for the structural changes needed to bring about individual behaviour change.

1.05pm   **Probability biases in repeated prisoner's dilemma game**
Atiyeh Yeganloo, Research Associate, El-Erian Institute, Judge Business School

This paper provides experimental evidence that biased perception of probabilities affects cooperation in repeated interactions. For instance, the decision to adapt an energy efficient product demands sustained cooperation. In an experiment, subjects completed a prisoner's dilemma game that continued with a probability. Using an incentive-compatible tool, I quantified the biases. About 53% of subjects are expected utility (EU); 47% are prospect theory: 21% overestimate small probabilities and underestimate large probabilities (inverse-S) and 26% underestimate small probabilities and overestimate large probabilities (S-shape). Results confirm that inverse-S (S-shape) subjects cooperate more (less) than EU ones.

1.15pm   **Nudging to reduce illegal garbage disposal**
Malte Dewies, Research Associate, Judge Business School

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Illegal garbage disposals are a persistent urban problem resulting in high clean-up costs, pollution, and nuisance among residents. We compared three adjacent city-areas in Rotterdam in the Netherlands where either (1) no action to decrease illegal garbage disposals was taken, (2) standard door-to-door canvassing was carried out, or (3) door-to-door canvassing was enriched with several nudges, most importantly a commitment-nudge. The nudge treatment proved highly effective, reducing illegal disposals with two-thirds and more than the standard canvassing treatment. Effects may be specific to neighbourhoods with high social cohesion. Implications for nudging research and practice will be discussed.

1.25pm **Q&A**

1.45pm **Keynote - How to Replicate the World's Greatest Successes in the transition to decarbonised economies**
Cristina Peñasco, Assistant Professor in Public Policy, Department of Politics and International Studies

Based on detailed empirical evidence, we will outline ten principles for successful policy making in low carbon transition to overturn conventional wisdom and suggest a new way forward that can help countries accelerate innovation, job-creation, and cost reduction in the shift from fossil fuels to clean technologies.

2.00pm **Keynote - Psychological inoculation against misinformation about climate change**
Sander Van Der Linden, Professor of Social Psychology, Department of Psychology

Much like a viral contagion, false information can spread rapidly from one individual to another. Moreover, once lodged in memory, misinformation is difficult to correct. In fact, decades-long disinformation campaigns have casted doubt in the public consciousness about the reality of and solutions to human-caused climate change. Inoculation theory offers a natural basis for developing a psychological 'vaccine' against the spread of misinformation. Specifically, in a series of lab and field studies on social media, I'll show that it is possible to "immunize" people against climate disinformation by pre-emptively refuting and exposing them to severely weakened doses of the very techniques that underlie its production.

2.15pm **Discursive barriers: understanding how the language of climate change inhibits mitigation policy**
Sam Stephenson, PhD Student, Department of Engineering

In recent years the coverage of climate change in politics and media has increased significantly. Despite this faster action is required and large swaths of the policy landscape remain untapped. This research uses semi-structured interviews with over 20 politicians and policy experts to analyse the language used about climate change and how it limits the policies considered acceptable. We find that narratives around jobs and innovation remain key to the climate change discourse and by expanding the discourse to include notions of intergenerational justice, fairness and community, policies that reduce our energy demand become more permissible, allowing for faster decarbonisation.

2.25pm **Q&A**

2.45pm   **Break**

3.00pm   **Keynote - The challenges of inspiring prosocial behaviour change**
Simone Schnall, Professor of Experimental Social Psychology, Department of Psychology

Actions that incur a small cost for the self while producing a large benefit for the greater good are essential when promoting positive norms. However, getting people to change their behaviour is notoriously difficult. One way in which prosocial behaviour can be elicited is via inspiring moral role models, because witnessing them creates a positive emotional state, which in turn inspires a desire to behave in positive ways. However, research on moral licensing has shown that under certain conditions engaging in one moral act can actually reduce the likelihood that someone will engage in another moral act subsequently. This talk will describe the challenges behind different motivations involved in prosociality, and how to overcome them.

3.15pm   **What is the realistic mitigation impact of changing passenger travel behaviour?**
Hugh Thomas, PhD Student, Department of Engineering

Substituting use of one transport mode with another (modal shift) is widely included in transport decarbonisation scenarios. This presentation will discuss the potential energy and emissions savings associated with changing traveller behaviour and the modes of transport used in the UK. The restrictions that impede modal shift and how they can be incorporated with optimisation techniques shall be introduced. The optimal passenger travel behaviour of the population shall then be presented, alongside a brief discussion on the barriers to achieving this.

3.25pm   **Are net-zero proposals feasible with limited zero emissions resources?**
Jennifer Hawkin, Research Student, Department of Engineering

To address climate change, governments and industries have developed net-zero emissions strategies which may dominate future investment and policy decisions. These are often resource-intensive, and it is unclear whether there will be sufficient net-zero-compatible energy generation capacity to meet the accumulated demands. This study uses a simple framework to quantify total energy resources implicitly demanded by global proposals. The final demand is given in terms of Biomass, Non-Emitting Electricity, and Carbon Storage (the Zero Emissions Resources, ZERs). ZERs are used as a common metric to quantify and evaluate the feasibility of net-zero proposals.

3.35pm   **Q&A**

3.55pm   **Keynote - Changing behaviour globally at scale: the challenge of a great food transformation**
Theresa Marteau, Director, Behaviour and Health Research Unit, School of Clinical Medicine

Food is the single strongest lever to optimise human health and environmental sustainability on earth. (EAT-Lancet 2019). Pulling this lever requires A Great Food Transformation (Eat-Lancet 2019). This includes radical changes to what we grow, how we grow it as well to what we eat including major reductions in meat and sugar and major increases in fruit, vegetables, legumes and nuts. This presentation will touch on three questions:

- *Which interventions show most (and which least) promise for shifting our diets at scale towards those that optimise health and the environment?*
- *How can barriers to achieving this change be overcome?*
- *What might facilitate rapid radical change of the kind needed to meet the challenge of A Great Food Transformation?*

Lightning Talks:

4.10pm   **Leveraging the power of decision contexts to reduce meat consumption**
Charlotte Kukowski, Postdoctoral Research Associate, Department of Psychology & Department of Zoology

Meat consumption is one of the most environmentally impactful individual behaviours. However, reducing meat intake is difficult, partly because food choice is strongly influenced by the context it occurs in. In this project, I seek to understand (1) how people's everyday food contexts influence their choice of meat vs. vegetarian food options, (2) whether we can teach people to actively design more supportive contexts, and (3) how the types of opportunities for and constraints on behaviour change differ across levels of inequality (e.g., income).

4.12pm   **Monitoring oil spills in the Russian sub-Arctic with high resolution satellite imagery**
Graham Sadler, PhD Student, Department of Geography (Scott Polar Research Institute)

The Arctic region is a very remote and vulnerable ecosystem but also rich in natural resources, which have been exploited for many decades. Examples of the potential hazards when exploiting natural resources in such fragile environments and the detrimental impact on the polar ecosystem and communities are all too frequent. In the case of the oil and gas industry, spills caused by the failure of old pipelines are a regular occurrence. Given the geographical isolation of these activities, remote sensing is an obvious technology to underpin an effective monitoring solution. This presentation will outline potential for the latest hyperspectral imagery.

4.14pm   **Using Natural Language Processing to Analyse the Post-Hurricane Ian News Landscape**
Kevin Kim Larson, Postgraduate Student, Department of Architecture

My research currently is to do a cross-sector analysis of the multitude of factors influencing the development of resiliency policy in South-Florida. This is done using natural language processing on Google news results following Hurricane Ian to understand the connections between different PESTLE categories. The results of this analysis will influence the next stage of my work which will be to do a systems analysis to more directly examine the explicit factors which influence resiliency policy in this particular context. I believe this work will help researchers and policy makers

better understand the complexity of these circumstances and lead towards better policy.

4.16pm **Sustainable aviation - carbon cakeism?**
Jill Ashcroft Campion**,** PhD Student, Department of Land Economy

A discussion of the continuing British Government discourse of aviation being "in the National Interest" and the aim to create "A future where UK aviation becomes synonymous with sustainability, and part of the solution to climate change." with a National Planning policy preferring the expansion of Heathrow adding an airport and extra flights equal to creating another Gatwick - and with existing airport expansion still on the table. Yet the Climate Change Committee is specifically recommending that there be no further airport expansion and in its recent Progress Report 2022 concluded there were "no credible policies plans" for achieving Net Zero by 2050 for aviation.

4.18pm **The Role of Cambridge Students in Addressing Misinformation: Cambridge University Students Against Pseudoscience**
Inigo Howe, Co-President, Cambridge University Students Against Pseudoscience

Misinformation, particularly around climate, is a current and growing problem that concerns researchers, students, and members of the public alike. As students, we are interested in ways that we can make a real contribution to addressing this issue. In this talk, we would like to tell you about a student initiative that attempts to counteract misinformation both effectively and compassionately. Students Against Pseudoscience was started in 2020 in response to what we saw as unproductive narratives around addressing misinformation. We are involved in organising events, educational material, and advocacy in support of this cause.

4.20pm **Q&A**

5.00pm **Drinks Reception**

6.00pm **End**