



Behaviour change: dealing with four key challenges

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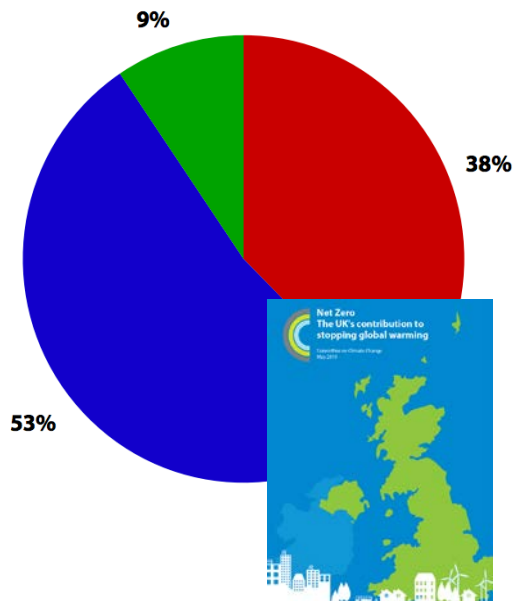
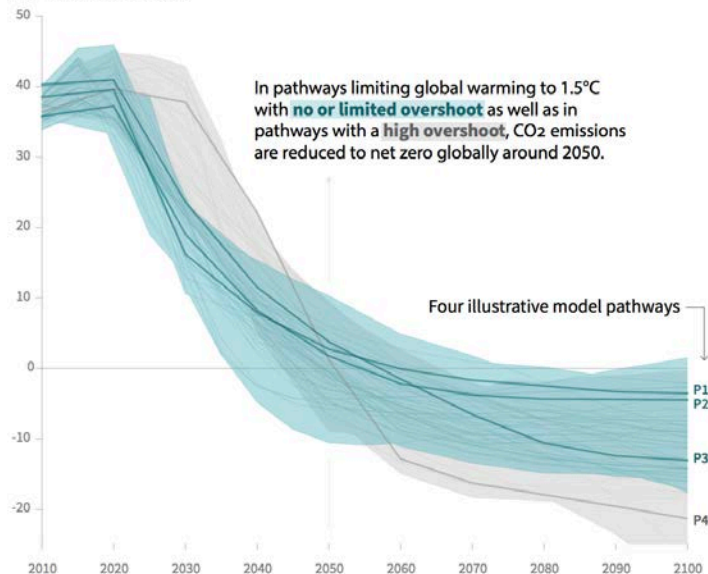
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Need for urgent social change



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Billion tonnes of CO₂/yr



- Low-carbon technologies or fuels not societal / behavioural changes
- Measures with a combination of low-carbon technologies and societal / behavioural changes
- Largely societal or behavioural changes

- Climate change is an **urgent** issue (IPCC, 2018)
- **Social and behavioural change** is essential and a **large** component of mitigating climate change (CCC, 2019)

People as agents of change



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- Social/ behavioural change is not just about citizen/consumer action
- Individual and collective action across a **range of contexts and roles**
- Direct and indirect emission reductions



Four challenging areas



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How can we as a society live differently *and better* to achieve systemic, deep and rapid emission reductions?

25%



Food

17%



Heating & cooling

Values & co -benefits

26%



Mobility

<33%



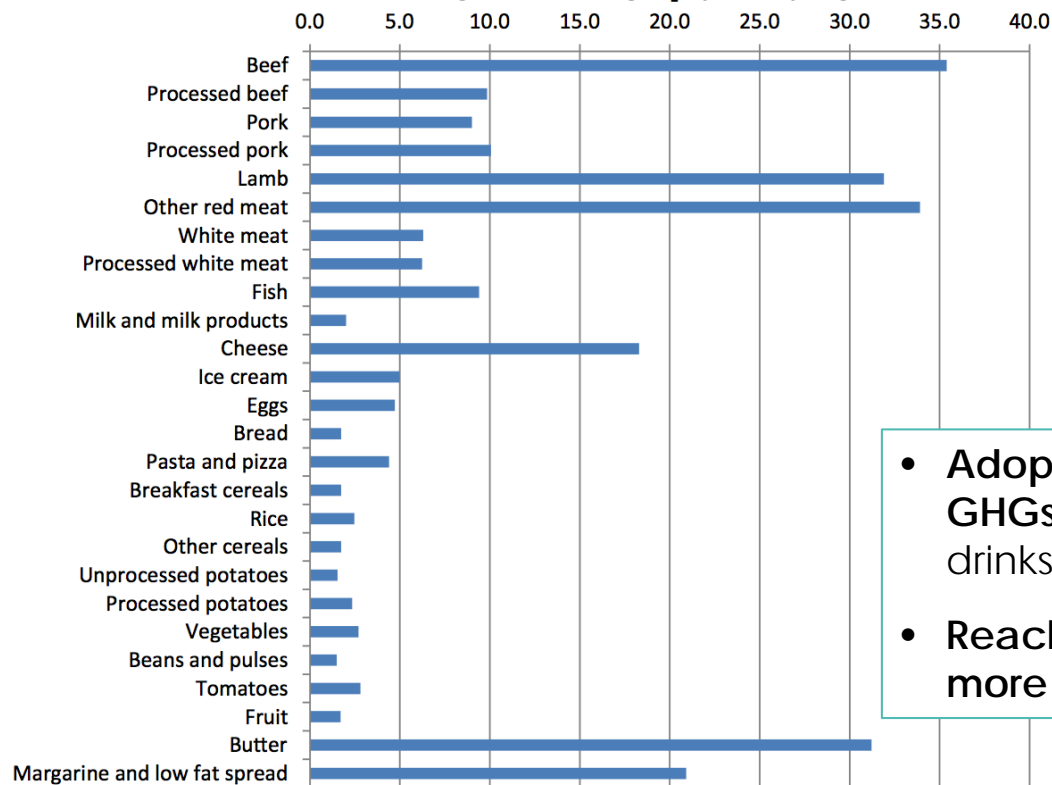
Material consumption

Co-benefits: e.g. health



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Greenhouse gas emissions in kg CO₂ equivalent per kg consumed food



- Adopting WHO dietary guidelines reduces GHGs by 17%+ (less red meat, dairy, soft drinks, snacks, etc.)
- Reaching 40%+ cuts in GHGs requires cutting more meat/dairy

Green et al., 2015

How can we change behaviour?



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Downstream – influencing individuals' choices

- information/advertising
- modelling (social learning); norm-based approaches

Upstream – influencing context/situation of action

- economic measures
- changes to available products and services
- changes to built environment
- education (and changing social norms)

Chickpea & Mushroom Roll (V) 0.3kg CO₂e _____ **£4.95**

Café Chips (V) 0.11kg _____ **£3**

CO₂e With garlic mayo

Cauliflower Fritter (V) 0.28kg CO₂e _____ **£4.25**

For a taste of our supper menu try our Lamb Stew

Lamb & Damson Stew 3.19kg CO₂e _____ **£13**

Locally sourced lamb, damson, carrots, potatoes, baby onions, celery with crusty ciabatta.



Getting the timing right...

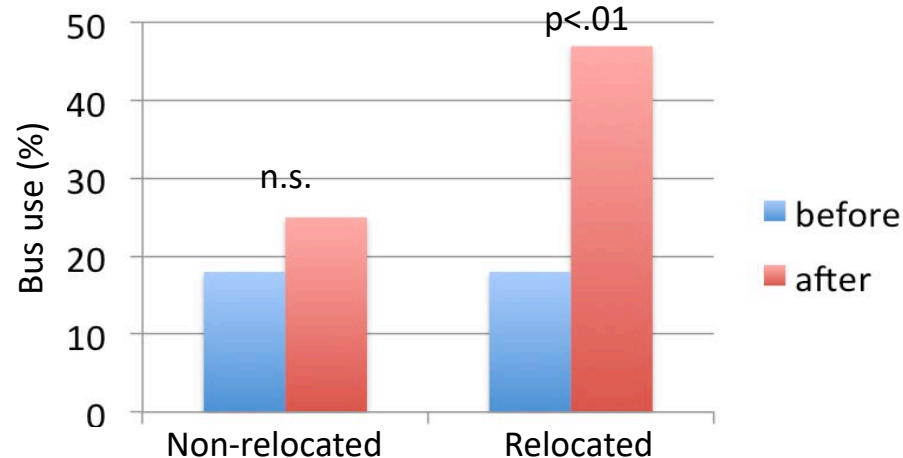


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Moving house disrupts habits

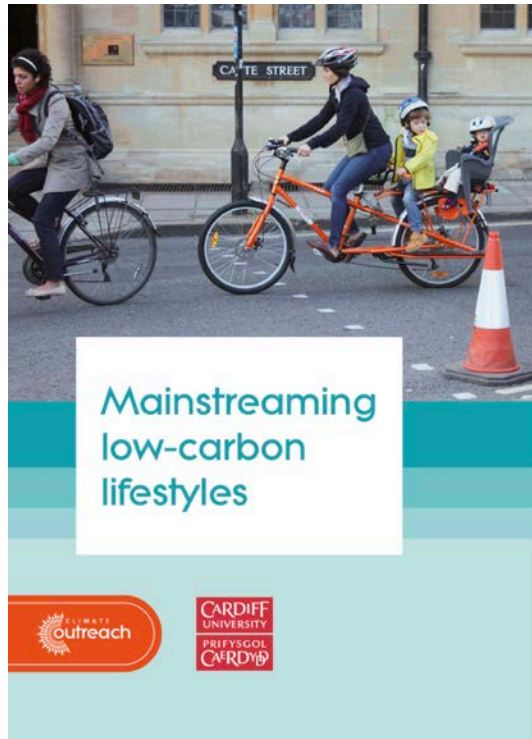
- Tailored bus info and 1-day pass to promote bus use given 6-weeks post-relocation was more effective (inc. from 18% to 47%) than when given to those not relocating



Engaging the public with climate change



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Engaging the public with climate change requires:

1. Targeting audience (social/env) values and identities
2. Changing (and using) social norms
3. Creating positive narratives and building self-efficacy
4. Moving beyond 'nudge' (to 'think' and 'enable')
5. Focusing on behaviours that matter
6. Getting the timing right

<https://cast.ac.uk/publications/>

What about (climate) scientists?



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- Work-related travel (e.g., conferences), esp. flying, likely to be main carbon emitting activity from research (Rosen, 2017)
- **Is this any better or worse amongst climate change researchers (who should 'know better')?**
- Climate scientists who reduce their carbon footprint are **more credible** and more likely to **inspire behaviour change** amongst the public than those who don't reduce their emissions (Attari et al., 2016) — *lead by example?*



International survey of academics (2017)

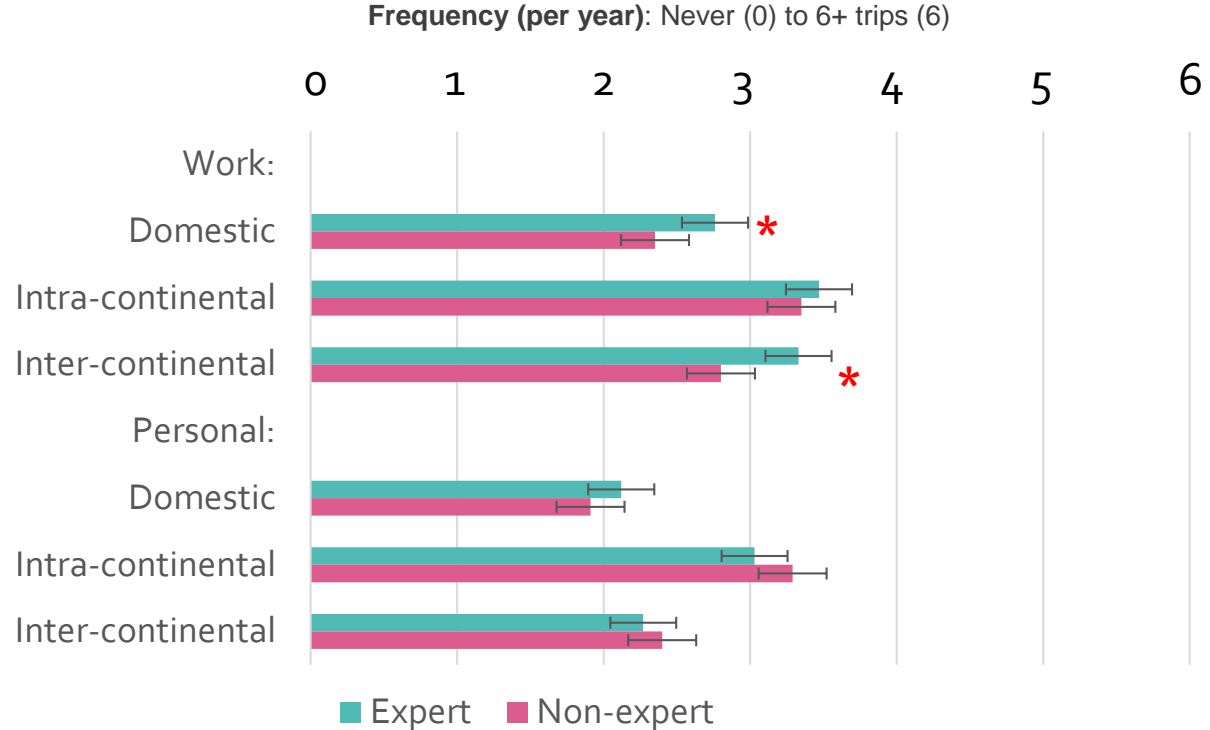
- **Disciplines** = biology, chemistry, economics, sociology, history, music, environmental sciences
- **30 universities** (stratified random sample from QS World University Rankings); emails from websites (N≈10,000); supplemented by email to Future Earth network
- Final sample = **1,408** (14% response rate, using Dillman method); many countries (esp UK, NL, Australia)

Climate scientists fly *more*



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- **Experts** = climate change/ sustainability a 'major' part of their job (17%; N=219)
- **Non-experts** = 'not at all' part of job (65%; N=832)
- Yet, experts have higher environmental **concern** and **awareness** of aviation impacts on cc



* $p < .05$

Senior climate scientists fly *most*



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R ²		SE	Beta	t	Sig.
0.27	Gender (M=1, F=2)	0.19	-0.04	-1.51	0.13
	Age	0.13	-0.03	-0.57	0.57
	Children under 5	0.27	0.01	0.25	0.80
	Children 5-10	0.29	0.03	0.99	0.32
	Children 11-17	0.30	0.05	1.56	0.12
	Children 18+	0.34	0.00	-0.10	0.92
	Student	0.50	0.09	1.39	0.17
	Researcher	0.49	0.17	2.62	0.01
	Asst/Assoc Professor	0.48	0.26	3.89	0.00
	Professor	0.52	0.42	7.14	0.00
	UK	0.32	-0.15	-3.58	0.00
	Mainland Europe	0.30	-0.13	-3.05	0.00
	North America	0.43	-0.03	-0.81	0.42
	Asia	0.58	0.04	1.29	0.20
	Africa	0.61	0.00	-0.10	0.92
	South America	0.84	-0.06	-1.90	0.06
	Conduct fieldwork	0.19	0.08	2.82	0.01
	CC major part of job	0.30	0.09	2.35	0.02
	CC knowledge	0.14	0.08	2.27	0.02
	CC worry	0.12	-0.02	-0.72	0.47
	Total personal flights	0.04	0.36	12.73	0.00

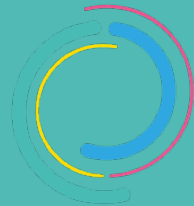
- Only partly explained by cc scientists **doing more fieldwork**
- **More senior researchers (esp Profs) and those with most cc expertise fly the most!**
- Europeans less likely to fly
- Those with high personal flights also fly more for work – income effect?

- We need to radically change behaviour to tackle climate change
- This involves engagement + upstream/downstream approaches
 - Information alone has small effects
 - Best to *combine* interventions ... and get the *timing* right
- Climate scientists who 'walk the talk' are more credible
- Climate scientists (esp senior ones) fly more than other academics!
 - Improving speed (and price) is seen as critical for adoption of non-aviation alternatives
 - Virtual options **really** need to be improved to be a viable alternative

Thank you

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