How to Avoid a Climate Catastrophe

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Talk for Gresham College at the Museum of London

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We need a green revolution

- Political focus, infrastructure….people's behaviour, choices, priorities.
- People are the key (national level, cities/towns, communities, groups, families, individuals.
- Psychology, therefore, is central.

Climate change

- The scientific evidence is *overwhelming.*
- *Remarkable* scientific consensus on climate change
- – ‘remarkable’ because it is rare to see this degree of scientific agreement on anything.
- ‘Climate change threatens the basic elements of life for people around the world.’

So why hasn't the message about climate change got through?

1. Understanding
2. Belief
3. Our sense of personal vulnerability
4. Our sense of personal responsibility
5. Behaviour and action

The 22nd Annual GQ Awards Special Issue

GQ

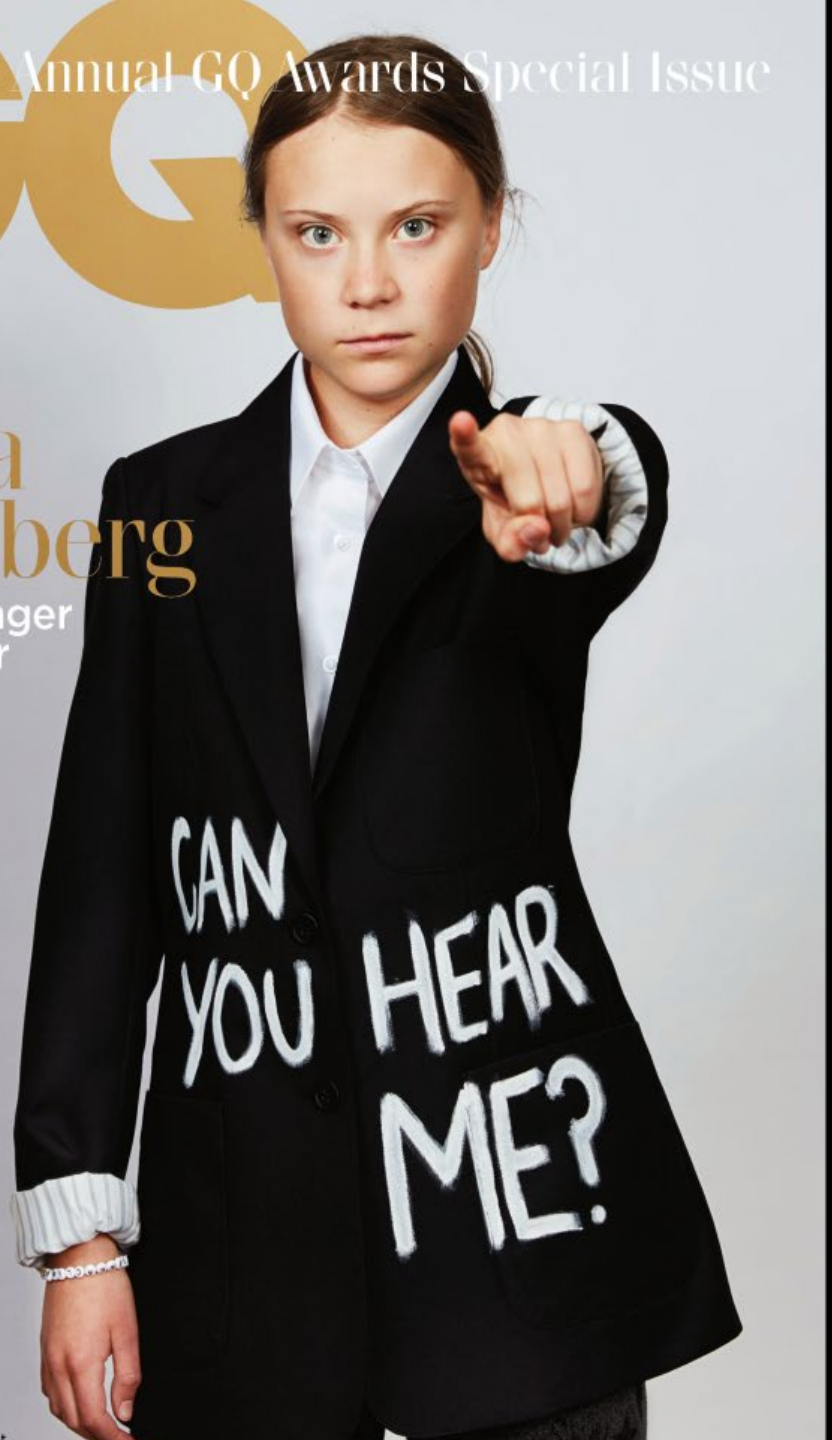
BRITISH

GENTLEMEN'S QUARTERLY

OCTOBER 2019

Greta Thunberg

Game Changer Of The Year



Interview by **Stuart McGurk**

1. Understanding

- There is a great deal of confusion.
- Confusion between ‘weather’/‘climate’, and the tendency to use examples of weather as evidence against climate change.

- The man on the bus in Sheffield.
- Donald Trump (December, 2017) tweeted:
  - **‘It could be the COLDEST New Year’s Eve on record. Perhaps we could use a bit of that good old Global Warming.’**

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2. Belief

- Only 52% of people in U.S. ‘believe that global warming is happening.’
- (figure fluctuates with economic conditions and other factors).
- 50% thought that global warming (if it does exist) was attributable to natural causes.

So what differentiates believers and non-believers?

- Faith in/understanding of science.
- Understanding of probabilistic terms like ‘extremely likely’ (IPCC) meaning ‘95% chance of occurring’.
- Political and ideological position
- (2013: only **50% of Republicans/88% of Democrats** believed in climate change – divergence after Kyoto Protocol, 1997).
- Education/age/social class/media consumption…..
- And individual psychology, including cognitive biases and underlying unconscious values and attitudes.

3. Our sense of personal vulnerability

- One cognitive bias particularly relevant:

- **‘optimism bias’**
- where people overestimate the likelihood of positive events happening to them and underestimate the likelihood of negative events.

- It’s very common.

- We think that our marriages will succeed, our start-up businesses will be successful and that we will have a long and happy life.

- Individual smokers think that they will be the ones who won't get cancer.

- Some people more extreme than others (dispositional optimism).

Personal vulnerability to climate change

- People think that climate change will affect other places (***spatial bias***) and future generations ***(temporal bias).***

- It won't affect them.

- Defence mechanism, supported by biased information processing.

Optimism bias and information processing

- Neural activity measured as participants estimated their probability of experiencing various negative events.
- They were then presented with real information.
- People more likely to change estimate only if new information was better than originally anticipated.

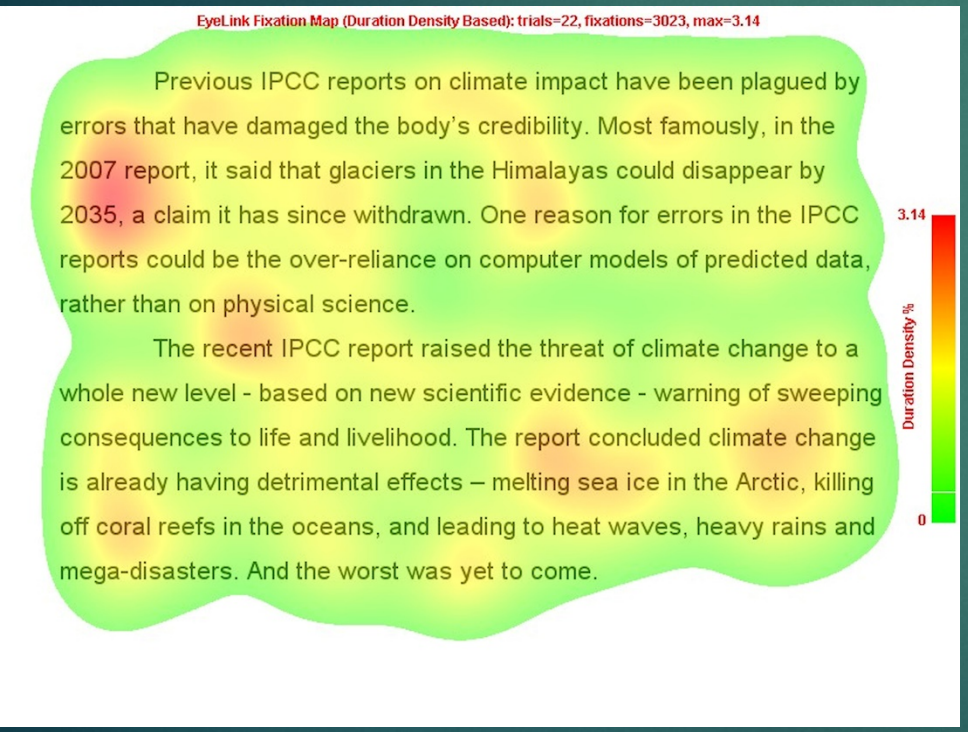
- This bias was reflected in the fMRI data.
- Reduced level of neural coding of undesirable information in a critical region of the frontal cortex **(the right inferior prefrontal gyrus).**

- Optimism bias is characterised by ***selective information processing.***

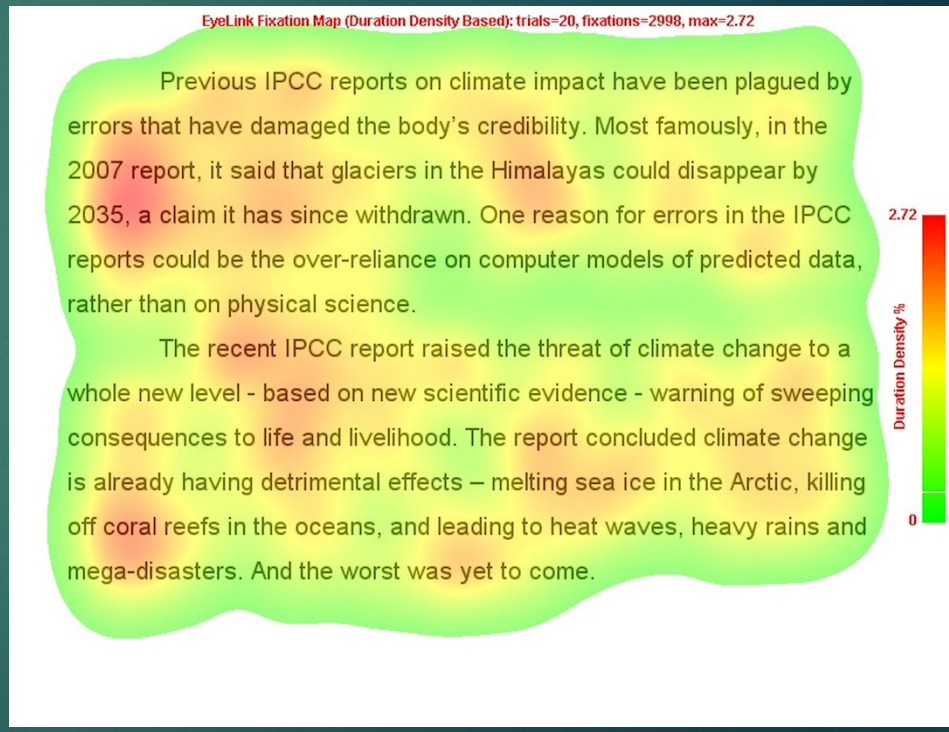
We used eye-tracking to measure biases in processing climate change messages

- Participants read articles online with arguments *for* ('bad' news) and *against* ('good' news) climate change in adjacent paras.
- Used eye-tracking to analyse individual fixations.
- Measured dispositional optimism.

Hotspot analysis of gaze fixations of optimists/non-optimists reading arguments against (first para) and for climate change (second para).



Optimists



Non-Optimists

Results

- Optimists spent less time attending to *any* arguments about climate changes.
- Optimists had significantly ***shorter*** fixation durations than non-optimists on arguments ***for*** climate change.
- Optimists concentrated more on arguments ***against*** climate change.

Effects of attentional bias

When asked to summarise:

- 2/3 of *non-optimists* framed recall in terms of the arguments for climate change ('this article is about global warming and how 95% of it is due to human activity').
- 2/3 of *optimists* framed it as a debate between two opposing positions ('it's about climate change, about trying to understand what's happening with the weather and there are different points of view').

Optimism bias and sense of personal vulnerability

- What is the probability of you *personally* being affected by climate change:

- Optimists: 36.5%
- Non-optimists: 56.8%

Implications?

- Messages about climate change may not be getting through because of an inherent cognitive bias designed to sustain our mood state (more severe for dispositional optimists).

- A more positive overall frame about possible solutions should increase both feelings of self-efficacy and visual attention to the underlying message.

4. Our sense of personal responsibility:

- ***Stern (2006):***
- ***'Human activities*** are a major driver of this rapid change in our climate…

- particularly patterns of consumption and energy use, driven by consumer demand for higher standards of living.'

Unilever's 'Sustainable Living Plan':

- KPI: 'Halve the greenhouse gas impact of our products across the lifecycle by 2020.'

1. Reduced GHG emissions from manufacturing chain.
2. Reduced deforestation.
3. Doubled their use of renewable energy.
4. Produced concentrated liquids and powders.
5. Reduced GHG emissions from transport.
6. Reduced GHG emissions from refrigeration.
7. Reduced employee travel.

The result:

- ‘Our GHG footprint impact per consumer has …….***increased*** by around 5% since 2010.’

- ‘We have made good progress in those areas under our control but the big challenges are those areas not under our direct control like…..***consumer behaviour.’***

Make it easier for consumers?

- *'Customers want to do more* in the fight against climate change if only we can make it easier and more affordable' (Terry Leahy, CEO Tesco, 2007).
- Market research surveys consistently supported this.
- Carbon labelling introduced.

TESCO

Greener living

BAYONET CAP

20 WATT

SIMILAR TO light output of 100W soft white bulb

Bulb

supported by EDF ENERGY

working with the Carbon Trust

12kg CO2

Compared to 100W conventional 55kg

per 1000 hrs of use

The carbon footprint of this lightbulb is **12kg** per 1000 hours of use and we have committed to reduce the footprint of future equivalent lightbulbs.

By comparison the footprint for the equivalent conventional lightbulb (100w) is **55kg** per 1000 hours of use

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SIMILAR TO light output of 100W soft white bulb

Bulb

supported by EDF ENERGY

Huge undertaking

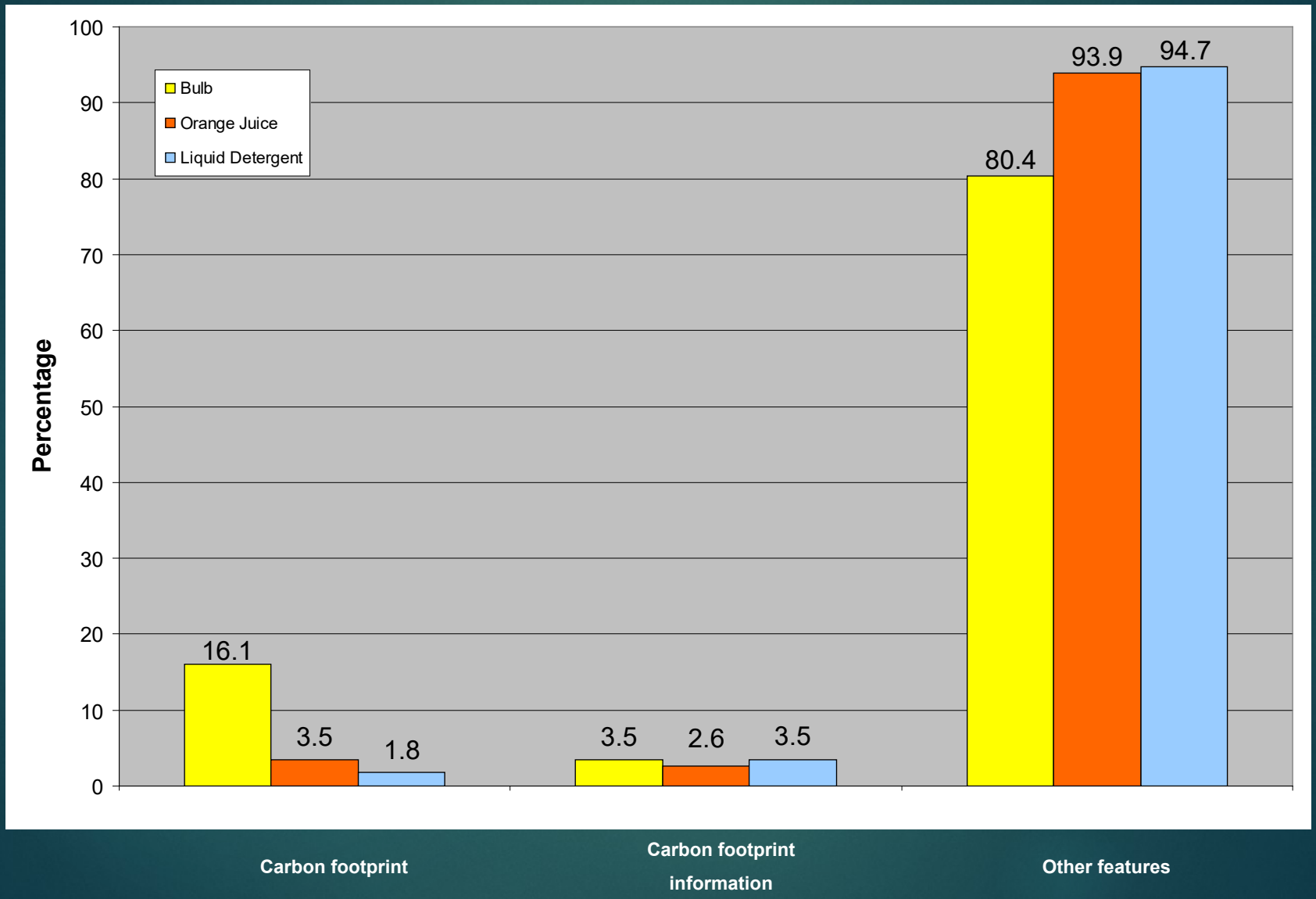
1. The start of Leahy's 'Green Revolution', to be led by consumer demand to drive the market.
2. It had worked with health info on food.
3. Tesco planned to label all 70,000 own brand products.
4. Several months to calculate the carbon footprint of each individual product.
5. Consumers should now choose the low carbon footprint alternatives.
6. But how did consumers *actually behave?*

The response?

- They didn't behave as they should, in terms of actually buying the low carbon products.
- And….they hardly looked at the carbon labels.
- Very significant 'value-action' gap (even when course of action is clear).

Gaze fixations by product

(first 5 secs.)



5. Behaviour and action

- The ‘value-action’ gap.
- Shown in many aspects of environmental behaviour.

This aerial shot of the aftermath of the Leeds Festival shows the extent of the problem

But is there really a ‘value-action’ gap?

(a discrepancy between attitudes to carbon and behaviour)

- The definition of an attitude:

- *‘a mental and neural **state of readiness** organised through **experience,** exerting a **directive** or dynamic influence upon the individual’s **response** to all objects and situations with which it is related.’*

(Allport, 1935)

How do we measure attitudes?

- You ask people to report their attitudes (often on a Likert Scale) – explicit attitudes.

- 70% of participants reported a preference for low carbon footprint products.
- 26% no preference.
- 4% of participants preference for high carbon footprint products.

But Allport also said:

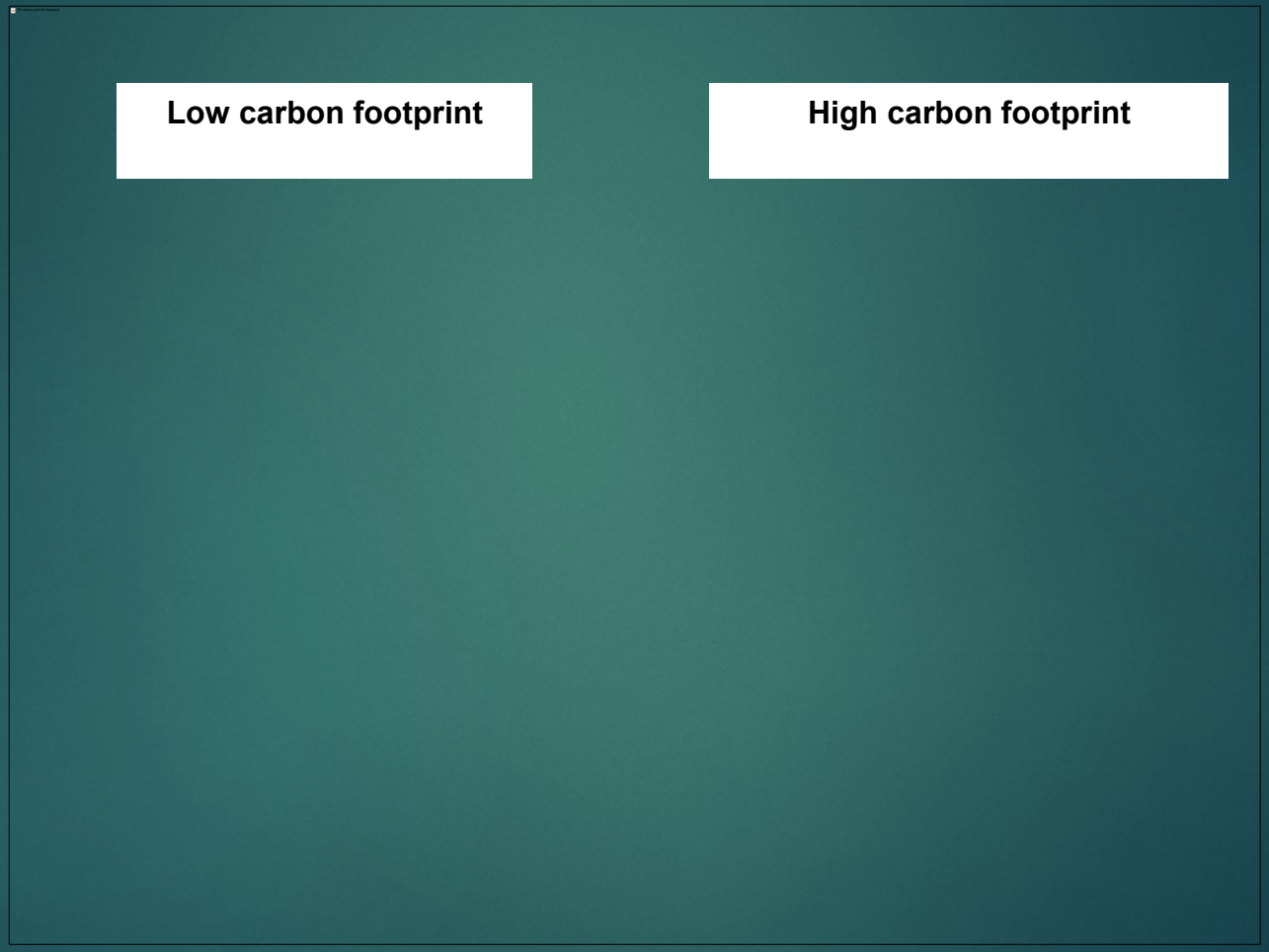
- ‘Often an attitude seemed to have no representation in consciousness

other than a vague sense of need, or some indefinite or unanalyzable feeling of doubt, assent, conviction, effort, or familiarity.’

Measuring attitudes that elude conscious introspection

- Use a computerised classification task (IAT) to measure associations in the brain.
- Measures association between ‘low’ or ‘high carbon footprint’ with concepts of ‘good’ or ‘bad’?
- Reaction time difference in judgment tasks.

Low versus high carbon footprint.



Good or High Carbon Footprint Vs. Bad or Low Carbon Footprint.

Good
or
High carbon
footprint

Bad
or
Low carbon
footprint

How do explicit and implicit attitudes connect?

- No significant correlation in this domain (statistically **dissociated.**
- Many ‘surface greens’ with a reported positive attitude to low carbon but actually a positive implicit attitude to high carbon.

The psychology of the ‘surface greens’

- Understanding these conflicted individuals may be critical.
- They may be very common.
- They have not been identified as a group thus far (miscategorised by DEFRA and everyone else).

Attitudes and behaviour

- Both explicit/implicit attitudes predict behaviour in different domains, and in different circumstances.
- IAT is a better predictor of *spontaneous* behaviours when behaviour is under cognitive, emotional or time pressure.
- IAT is a better predictor of behaviour in sensitive domains (including racial discrimination and environmental issues).

Our research

- Implicit attitude to carbon footprint predicts choice of low carbon products under time pressure.
- Implicit attitude to carbon footprint predicts unconscious eye fixations on climate change images and carbon labels.
- Rethink the ‘value-action’ gap and behaviour change.
- Implicit attitudes can be modified (using emotive film).
- Beattie and McGuire (2020) ‘Environment and Behavior’, currently online.

Mobilising the public:
Do we need a new approach?

- The unconscious was ignored by psychologists for a long time.
- But not by ***all*** psychologists.
- Ernest Dichter and smoking.

Critical to identify the *deeper* psychological functions of smoking

- Self-reward (legitimate excuse for interrupting work)
- Never alone with a cigarette, warm glow (fire) – Strand, Embassy.
- Relieve tension (self-adaptor: oral gratification in an adult way).

- Not afraid to discuss unconscious motivations.
- Not afraid to disregard people's self-reports.
- Or their personal accounts or narratives as explanations of their own behaviour.

The fight against the science

- Tobacco companies wanted to open a great ‘debate’ about the effects of smoking on health.
- Created the Council for Tobacco Research in 1953 to fund research.
- Enlisted some great academics (Hans Selye: stress that kills, not smoking; Hans Eysenck: smoking confounded with personality).

Encouraging the ‘Green Revolution’

- We need to help explain the science better and clear up conceptual confusions.

- Climate change messages must be designed to overcome optimism bias. We cannot just scare people

  (‘this house is on fire’).

- We need to increase people’s feelings of self-efficacy and response efficacy when it comes to their actions. They are crucial to making a difference.

Encouraging the ‘Green Revolution’

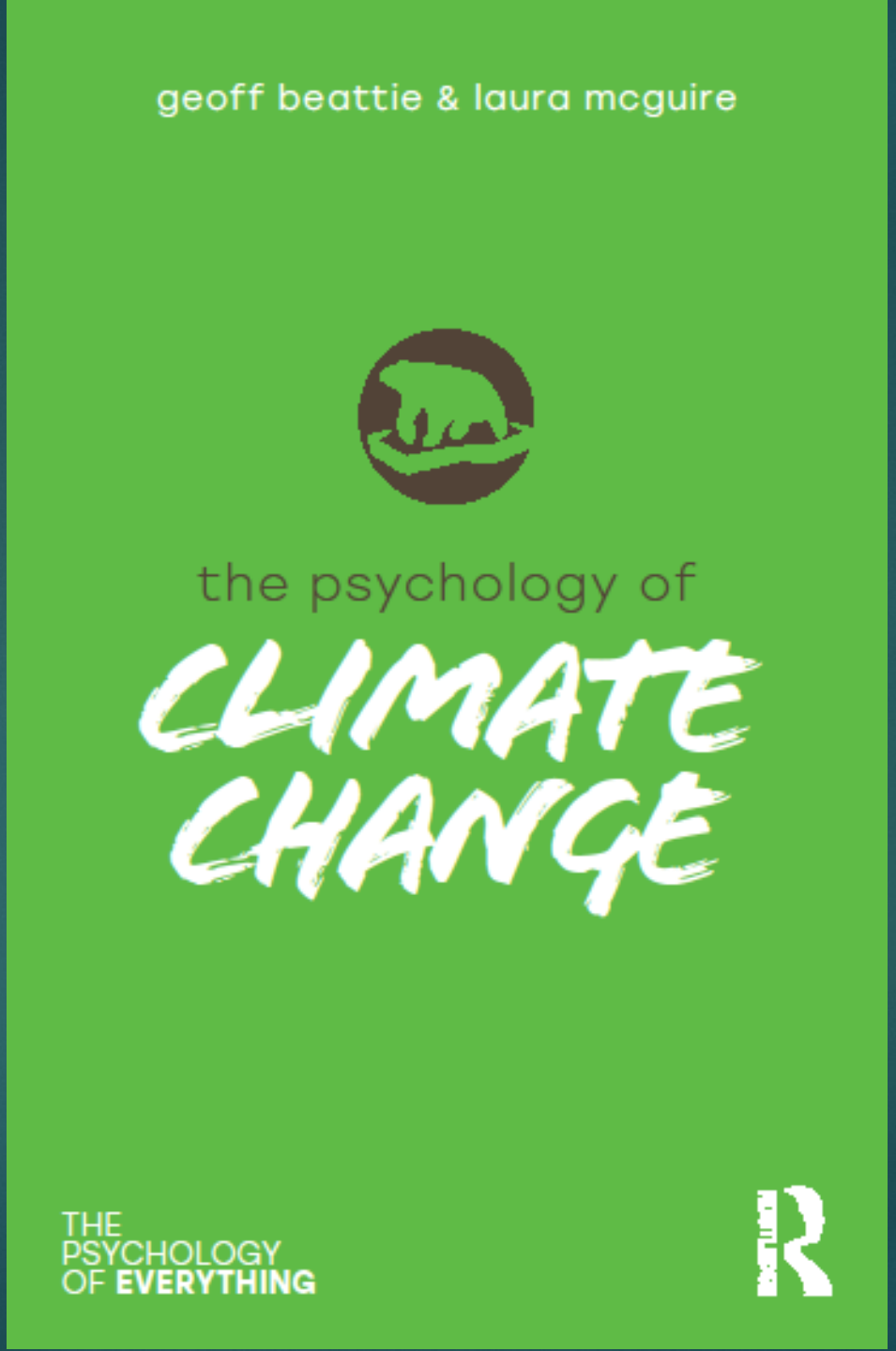
- Self-reported attitudes to carbon might lull us into a false sense of security. We need to find measures of implicit attitude.
- We need to understand that many people have implicit and explicit attitudes to carbon that are dissociated.
- We need to find new ways of identifying these individuals.
- We need different strategies for different groups and countries (the barriers will be different).

Encouraging the ‘Green Revolution’

- What do these individuals see? What do they attend to?

- *We need to work on changing our implicit attitude to carbon products and lifestyles by influencing our underlying associative networks.*

- The smoking industry showed that such a change is possible, with significant behavioural implications (its one legacy).


geoff beattie & laura mcguire
the psychology of
CLIMATE CHANGE
THE PSYCHOLOGY OF EVERYTHING