



# Public Perceptions of Climate Change: Key Trends and Emerging Issues

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University of Bergen, October 2015

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UNDERSTANDING  
RISK

# Overview

- **Public Perceptions of Climate Risks**
- **Charting Trends Over Time and Space**
- **Extreme Weather Impacts and Change**

# Climate Change

## - a Human and Social Problem!

- **Key drivers of anthropogenic climate change are *human activities* (e.g. food and heating, transportation, consumption, population growth).**
- **Solutions are typically new technologies / engineering interventions or economic instruments (plus 'lifestyle change')**
- **Climate mitigation or adaptation is unlikely to succeed without behaviour and lifestyle changes**

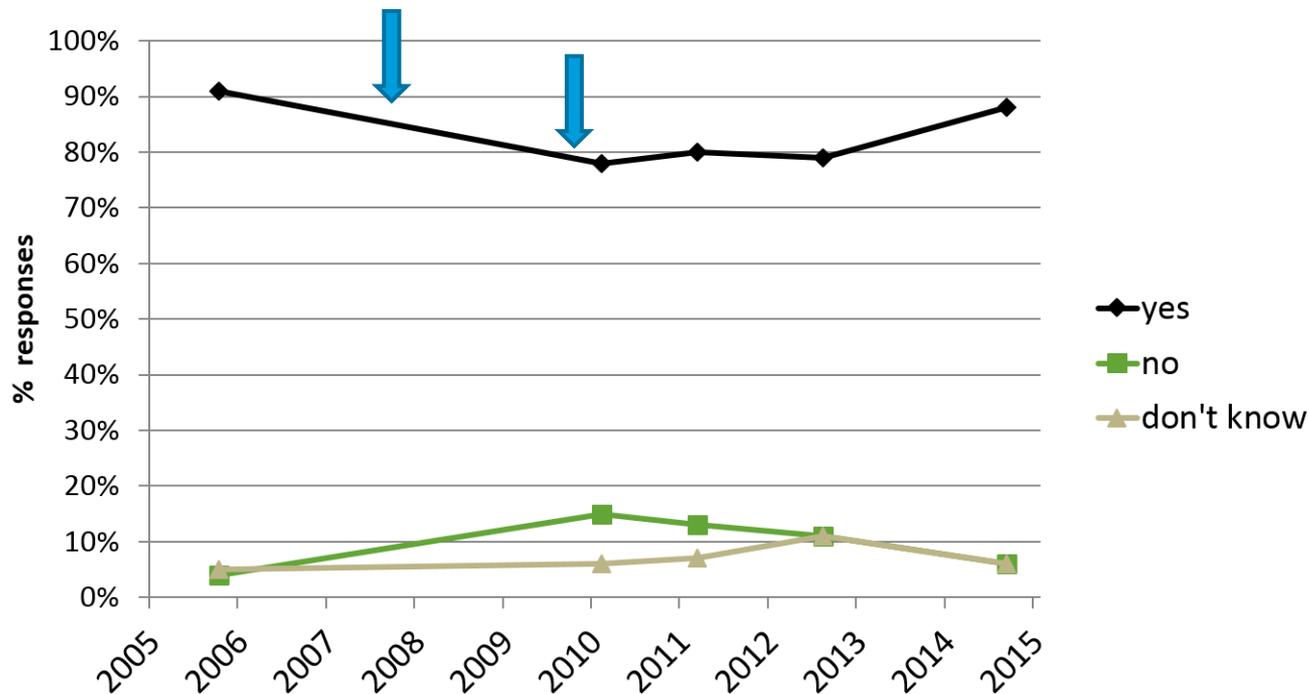


# Climate Change Risk Perceptions

- *People are concerned about cc (until very recently increasing), believe it is happening, but some still think it is natural variation*
- *Can confuse cc with other environmental issues (e.g. ozone) but decreasing*
- *View it as a distant problem affecting other people and times*
- *Recognise the effects (heat, melting glaciers) but don't spontaneously connect these with anthropogenic causes (energy use, deforestation)*
- *Many causes (e.g. electricity use) and some consequences (ocean acidification) 'invisible' in everyday life*

Lorenzoni and Pidgeon (2006) *Climatic Change*, 77, 73-95.  
Pidgeon (2012) *Climate Policy*, 12 (Sup01), S85-S106.

# Acceptance that the climate is changing (Nationally Representative for Great Britain 2005-2014 - Understanding Risk Group Surveys; n circa 1,000 per wave)



Survey respondents asked:

“As far as you know, do you think the world’s climate is changing, or not?”

n ≥ 1,000 at each time point  
Data accurate within +/- 2 to 3% (95% C.I.)



Figure XXXX. Newspaper coverage of climate change and global warming in the UK between 2000 and 2015, total of nine newspapers (source: [Luedecke et al., 2015](#))

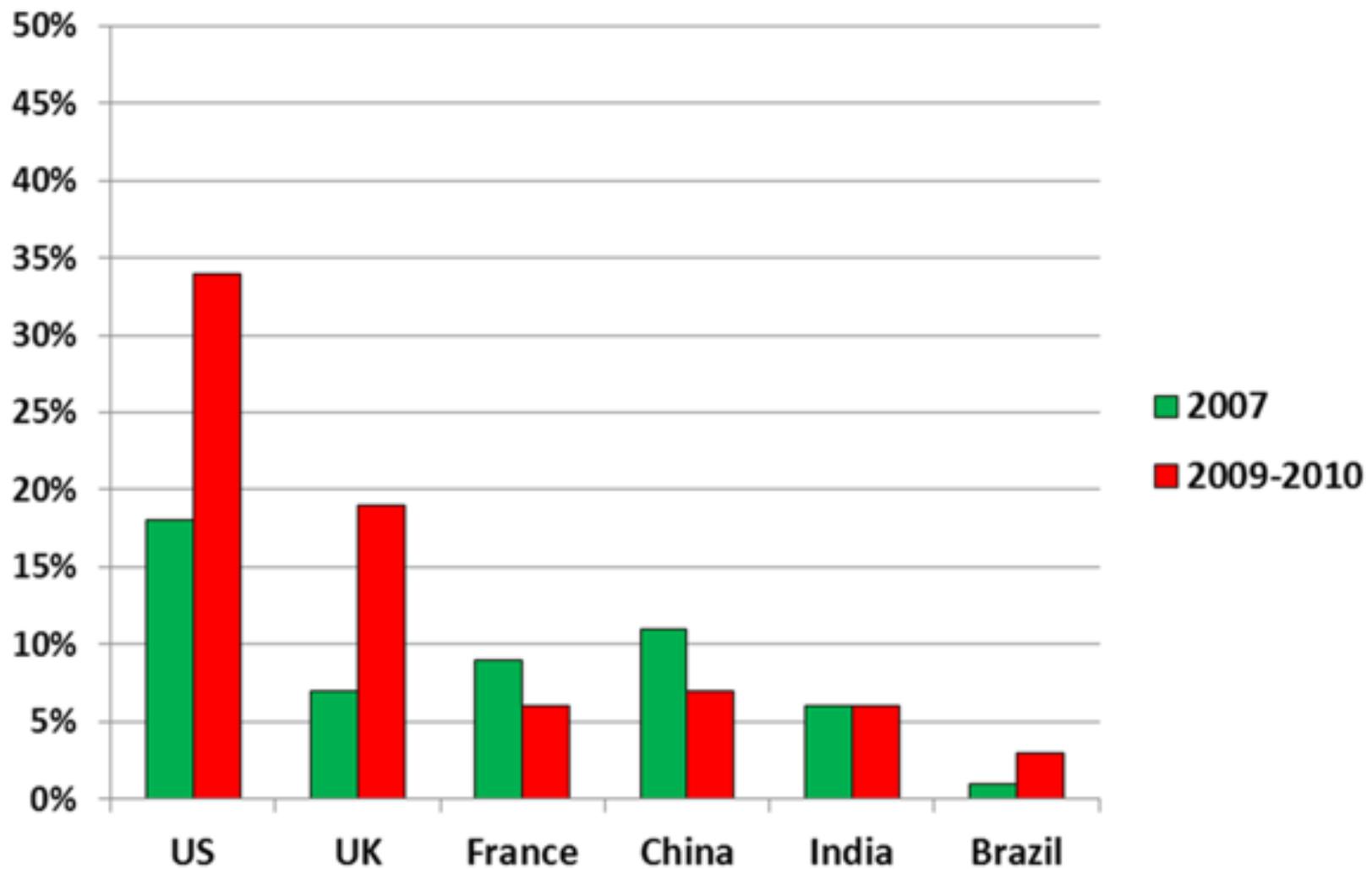
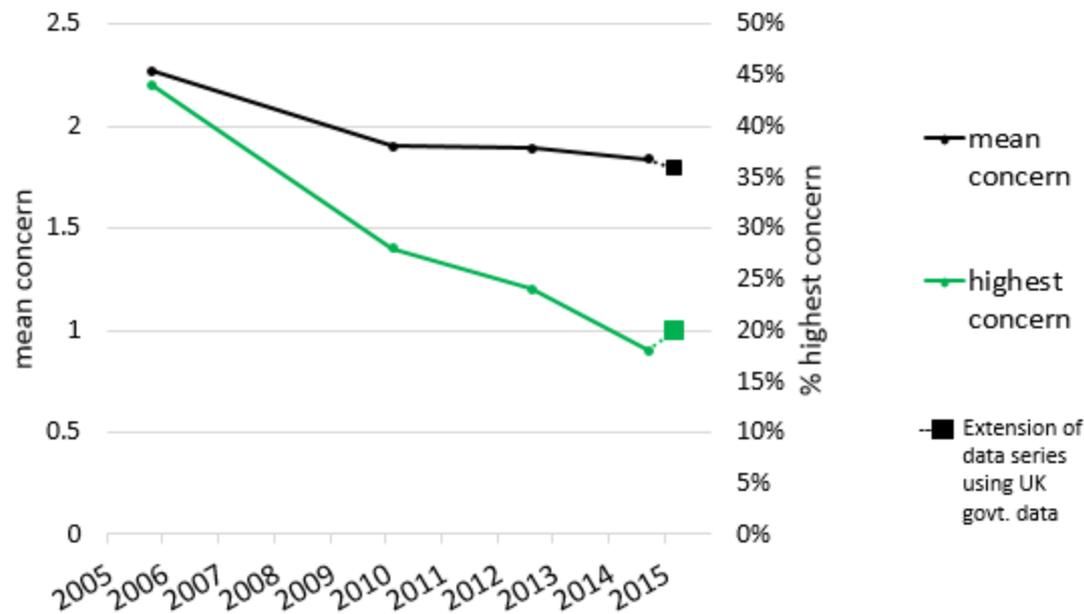


Figure XXXX. Number of articles containing sceptical voices as a percentage of the total number of articles covering climate change or global warming in 2007 and 2009-10 (Source: Painter & Ashe, 2012)

# 'Concern' about climate change (2005-2014)

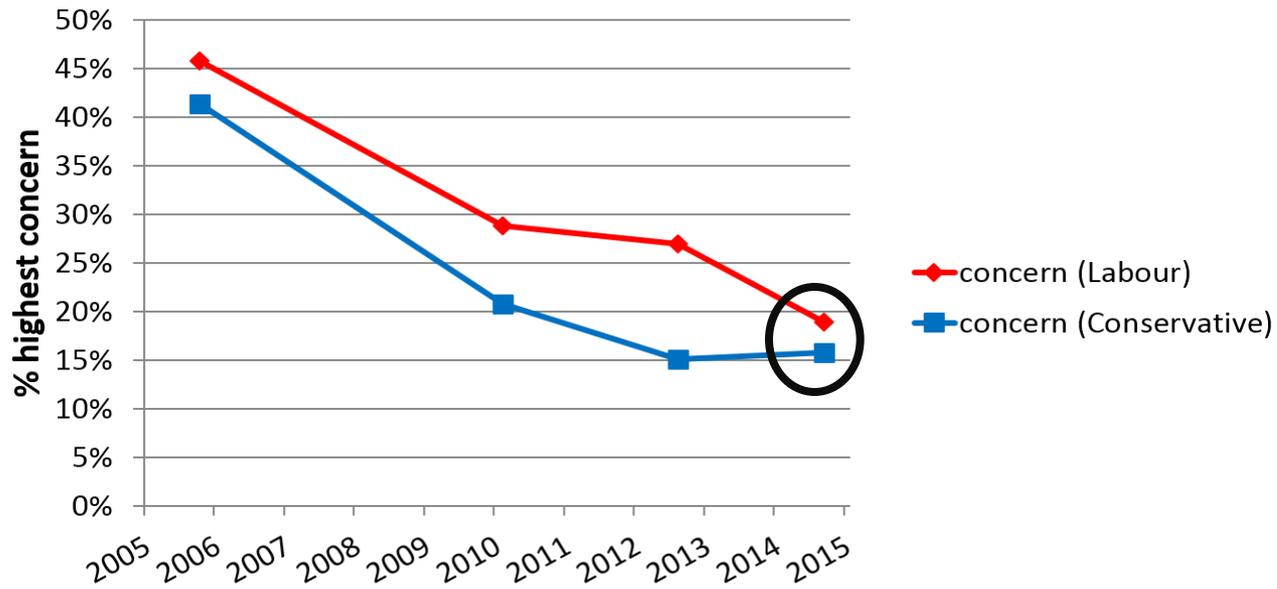


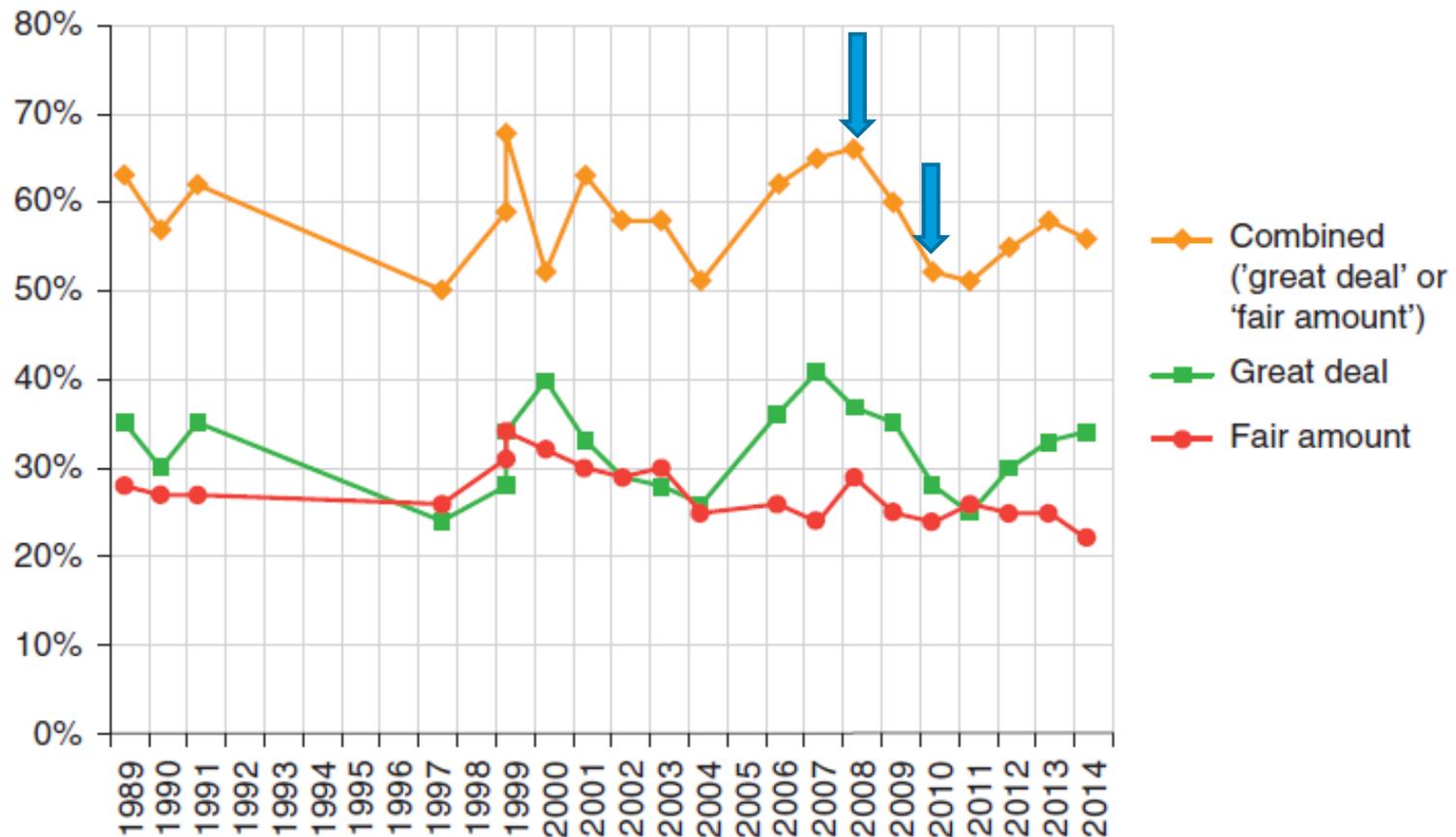
Survey respondents asked:

“How concerned, if at all, are you about climate change?” (4-point scale)

n ≥1,000 at each time point  
Data accurate within +/- 2 to 3% (95% C.I.)

# 'Concern' about climate change (2005-2014)





**FIGURE 3 |** Changing levels of 'worry' about climate change in the United States. Data points show the extent to which U.S. public survey respondents reported personally worrying about climate change over a 25-year period. Data combined from Refs 20 and 64 ( $n \geq 1000$  at each time-point).

**TABLE 3** | Proportions of Survey Respondents Considering Climate Change to be a 'Threat'

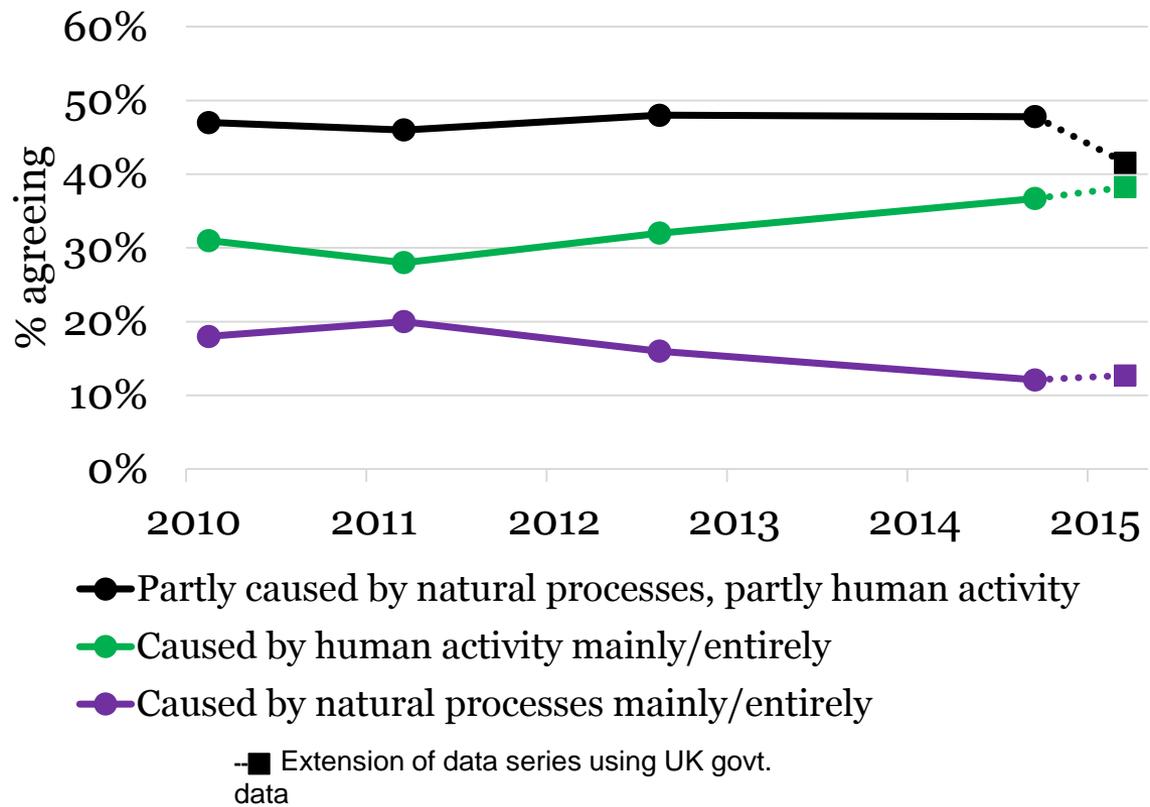
Region or Country	% Considering Climate Change to be a Threat		
	2007–2008	2010	Change
Latin America	67	73	+6
Sub-Saharan Africa	29	34	+5
Commonwealth of Independent States	42	44	+2
Developing Asia	31	31	0
Middle East & North Africa	42	37	-5
Developed Asia	79	74	-5
Eastern/Southern Europe	67	60	-7
USA	63	53	-10
Western Europe	66	56	-10
World average	41	42	+1

Mongolia	30	54	+24
Philippines	42	60	+18
Ecuador	69	85	+16
Uganda	30	45	+15
Morocco	29	41	+12
Haiti	35	18	-17
Sudan	42	26	-16
France	75	59	-16
Czech Republic	39	28	-11
United States	63	53	-10

Data obtained from Ref 80.

Source: Capstick et al (2014) International trends in public perceptions of climate change over the past quarter century. *Wires Climate Change*, 10.1002/wcc.321

# Belief about climate change causation (Nationally Representative for Great Britain 2010-2014 - Understanding Risk Group Surveys; n>1,000 per wave)



Survey respondents asked:

“Which, if any, of the following best describes your opinion about the causes of climate change?”

n ≥ 1,000 at each time point  
 Data accurate within +/- 2 to 3% (95% C.I.)



# Factors Affecting Attenuation of Concern (US, UK 2007-2010)

## International trends in public perceptions of climate change over the past quarter century

Stuart Capstick,<sup>1,2,3\*</sup> Lorraine Whitmarsh,<sup>1,2</sup> Wouter Poortinga,<sup>1,2</sup>  
Nick Pidgeon<sup>1,2,3</sup> and Paul Upham<sup>2,4</sup>

Public perceptions of climate change are known to differ between nations and to have fluctuated over time. Numerous plausible characterizations of these variations, and explanations for them, are to be found in the literature. However, a clear picture has not yet emerged as to the principal trends and patterns that have occurred over the past quarter-century or the factors behind these changes. This systematic review considers previous empirical research that has addressed the temporal aspects to public perceptions. We address findings that have been obtained since the 1980s and using a range of methodologies. In this review, we consider early, seminal work examining public perceptions; survey studies carried out over long timescales and at an international scale; detailed statistical analyses of the drivers of changing perceptions; and qualitative research featuring a longitudinal component. Studies point to growing skepticism in the latter 2000s in some developed countries, underpinned by economic and sociopolitical factors. Even so, in many parts of the world, there has been growing concern about climate change in recent years. We conclude that the imbalance in the literature toward polling data, and toward studies of public perceptions in Western nations (particularly the United States), leaves much unknown about the progression of public understanding of climate change worldwide. More research is required that uses inferential statistical procedures to understand the reasons behind trends in public perceptions. The application of qualitative longitudinal methodologies also offers the potential for better appreciation of the cultural contexts in which climate change perceptions are evolving. © 2014 The Authors. *WIREs Climate Change* published by John Wiley & Sons, Ltd.

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*WIREs Clim Change* 2014. doi: 10.1002/wcc.321

- ‘Climate ~~Gate~~’
- Economic Circumstances (measured by GDP/Unemployment Rates)
- Media Coverage (quantity)
- Elite Cues (on both sides)
- More Research Needs to be Done

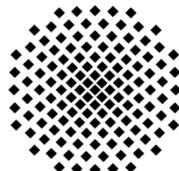
# European Perceptions of Climate Change (*EPCC*) Project



Four Countries:

UK, France, Norway, Germany

Common Survey Instrument



# The Possible Role of Qualitative Longitudinal Research (QL)?

Stability and Change in British Public Discourses about Climate Change between 1997 and 2010

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## ABSTRACT

Public understanding of climate change has been a topic of environmental social sciences research since the early 1990s. To date, temporal change in climate change understanding has been approached almost exclusively using quantitative, survey-based methodologies, which indicate that people's responses on a limited number of measures have indeed altered in response to changing circumstances. However, quantitative longitudinal evidence can be criticised for presenting an overly simplistic view of people's beliefs and values. The current study is the first to explore changes in public understanding over an extended time period using in-depth qualitative methods. The study utilises a novel longitudinal methodology to explore changes in discourses across six separate datasets collected over the period 1997–2010, comprising a total of 208 public participants from across Great Britain. We find for the first time that discourses regarding the relevance of climate change to everyday life, and concerning rationales for personal action have exhibited subtle but important shifts over this period. By contrast, other aspects of public understanding have exhibited considerable stability over time, particularly with respect to ethical

*Environmental Values* 24 (2015): 725–753.  
© 2015 The White Horse Press. doi: 10.3197/096327115X14420732702617  
Submitted 18 August 2014, accepted 16 December 2014

- Need for more depth qualitative studies Pidgeon (2010), Wolfe & Moser (2012)
- Could we chart changes in climate discourses (cf Dryzek) over time?
- Data-sets accessed from 1997-2010
- Methodologically challenging – hence bespoke methods of data analysis

Table 1. Overview of datasets used in the qualitative longitudinal analysis

Dataset year	Study overview	No. participants (no. groups)	Sampling strategy and data collection	Principal researcher; illustrative publications
1997/8	EU-wide project into public understanding of climate change and wider environmental issues (GB data only utilised in present study)	14 (4)	Participants recruited to be demographically diverse; 'participatory dialogue' enabled between public and experts/stakeholders on environmental topics including climate change	Eric Darier; Darier et al. (1999), Darier, Shackley and Wynne (1999)
2000	Doctoral research into cross-cultural perceptions of climate change (GB data only used in present study)	19 (4)	Participants recruited via postal survey; 'discussion groups' convened based on attitudes to climate change (e.g., 'denying' and 'engaging' individuals)	Irene Lorenzoni; Lorenzoni (2003), Lorenzoni and Hulme (2009)
2002	GB project examining risk perceptions of technology and environment, including of climate change	24 (3)	Participants recruited by market research company; focus groups discussed climate change and related 'risks'	Nick Pidgeon; Bickerstaff et al. (2008)
2003	Doctoral research into GB climate change perceptions	20 (N/A)	Opportunity/snowball sampling; participants interviewed individually or in pairs on attitudes to climate change	Lorraine Whitmarsh; Whitmarsh (2008, 2009)
2007	GB project examining perceptions of climate change and energy issues	84 (9)	Participants recruited by market research company; focus groups organised by gender (as well as mixed gender groups) to discuss climate change	Nick Pidgeon; Butler and Pidgeon (2009); Butler (2010)
2010	Doctoral research into longitudinal component of climate change perceptions	47 (5)	Participants recruited by market research company; focus group structure designed to be comparable to earlier studies	Stuart Capstick; Capstick (2012)

Source: Capstick, Pidgeon, and Henwood (2015) *Environmental Values*, 24, 725-753.

Table 2. Research themes and open-ended questions used in data collection

Study theme	Example protocol question or moderator question from transcript
General knowledge; initial thoughts about climate change	What sort of images or thoughts come to mind when you think about climate change? (2000) Are there any thoughts about global warming or climate change that spring to mind? (2002)
Causes and consequences of climate change	Why do you think climate change is happening? (1997) Do you personally think the climate is changing and if so, are human actions responsible? (2007) How do you think climate change might affect the world you live in? (2000) In terms of the impacts of climate change, what do you think is likely to happen? (2003)
Concern about climate change; perceived severity	How important or non-important is climate change to you? (1997) Would you say that climate change is something that concerns you? (2003)
Locus of responsibility for addressing climate change	Whose responsibility is it to do something, if anything, about climate change? (2000) Is it an individual's responsibility to do their bit or is it up to governments, is it up to industry, or who? (2002)
Means of responding to climate change (behavioural and policy)	What do you think should be done about climate change? (1997) What do you think should be done to tackle climate change? (2007)

# 3 Discourses Examined

- **Lifestyles and Cultural Practices**
- **Accounts of Personal Action**
- **Climate Change Ethics**

Dataset year	Lifestyles and cultural practices	Accounts of personal action	Climate change ethics
1997/8	Little reference to changing cultural conditions seen as favourable to climate change responses	Personal choices characterised in terms of external and structural factors	Consistent emphases across years on intergenerational obligations, stewardship of natural world, and notions of justice and fairness
2000		Emergence of a moral component in accounts of behaviour	
2002	Emergent emphasis on the normalisation of pro-environmental lifestyles	Accounts of behaviour comprise negotiation and compromise between normative pressures and competing demands	
2003			
2007			
2010			

Figure 1. Summary of change and continuity in discourses over time

## Changing Cultural Practices

When I was growing up ... you went to shops where you were and you bought things. Nowadays it's a pretty automatic reaction for lots of people, jump in the car and go to the out of town shopping centre (P13-2003).

People used to work where they could walk to their work. Now they drive fifty miles across the country and back ... a car wasn't a necessity fifty years ago (P52-2007).

I think that [previously] it was an issue that stood apart from your life, and that you made certain changes to be green, rather than that they were what you did in your everyday life, which is the way that I think people approach it now ... now it's the everyday, make sure that you know why's that cardboard going in the bin rather than in the recycling. (P22-2010)

## Accounts of Personal Action - and Contradictions Therein

You're conscious about how you feel about doing things ... I don't drive anywhere, I'm quite happy to walk and catch a bus ... I would do anything, if I possibly – within my power I would do anything to help. (P6-2007)

I've become in the last few years more aware than ... any physical thing that I buy, it's food miles. It's the concept of looking at things and thinking: 'why do I need to buy something that's been flown from New Zealand?' ... I consciously look for the things that are grown locally. (P27-2010)

I recycle everything that can be. But, I drive a three litre diesel [because] it's damn comfortable ... And as much as I try and do all my bits and be as good as possible, I'm not that great. And I will jump on a plane without thinking about it. (P35-2010)

## Climate Change Ethics

Money and trade are the two main factors of why all this – going back to climate change – I think ... a general overall worldly greed for certain things has made [people] not really take care of nature as such. (P17-2010)

developed countries. This is articulated by P15-2003: ‘You’re effectively asking ... developing economies not to develop because basically we’ve caused climate change ... it’s a double standard argument’. Similarly, P65-2007 argues ‘China and the other developing nations are ... saying “well you’ve done your development now, you’ve done your polluting ... it’s not morally equivalent, we’ve got to do some catch-up”’; and P7-2002 that ‘these countries ... they all want what we’ve got, and you can’t blame them’.

# 'Lifestyle Change' could contribute a 30% cut in UK Greenhouse gas emissions (UK Energy Research Centre, 2008)



- But 'lifestyle change' hides a multitude of sins, and theoretical modelling rarely matches reality

# The Energy Biographies Project

- **Longitudinal Biographical Interviews**
  - **Four sites: Ely, Peterston (Cardiff), Lammas (West Wales), Royal Free Hospital (London)**
  - **3 longitudinal interviews (original group of 74 in first round narrowed down to 36 for rounds 2 & 3)**
  - **Multimedia component**
  - **6 months between interviews**



Royal Free Hospital,  
London



Lammas, West Wales

See: [www.energybiographies.org](http://www.energybiographies.org)

# Energy Biographies - Findings



There is effort involved when people are seeking to work out:

- what is the best thing to do?
- how to resolve moral tensions over lo[ contemporary values?
- 
- how difficult it can be to think about a based on contemporary ideals of what living?
- How to resolve personal uncertainties magnified during key life-course transitions?

## Energy Biographies: Narrative Genres, Lifecourse Transitions, and Practice Change

Christopher Groves<sup>1</sup>, Karen Henwood<sup>1</sup>,  
Fiona Shirani<sup>1</sup>, Catherine Butler<sup>2</sup>,  
Karen Parkhill<sup>3</sup>, and Nick Pidgeon<sup>1</sup>

### Abstract

The problem of how to make the transition to a more environmentally and socially sustainable society poses questions about how such far-reaching social change can be brought about. In recent years, lifecourse transitions have been identified by a range of researchers as opportunities for policy and other actors to intervene to change how individuals use energy, taking advantage of such disruptive transitions to encourage individuals to be reflexive toward their lifestyles and how they use the technological infrastructures on which they rely. Such identifications, however, employ nar-

Science, Technology, & Human Values

1-26

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[www.energybiographies.org](http://www.energybiographies.org)



# Psychological Distance

*Won't affect  
people like me*

**Social Distance**

*Does it really  
exist/have serious  
impacts?*

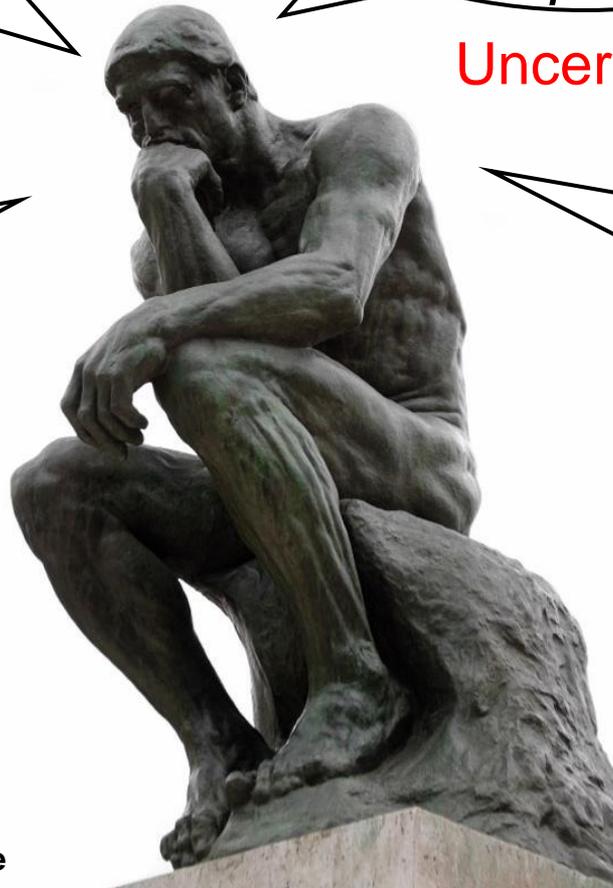
**Uncertainty Distance**

*Won't happen  
here*

**Geographic Distance**

*Won't happen in  
my lifetime*

**Temporal  
Distance**



Spence, Poortinga, Pidgeon (2012) The Psychological Distance of Climate Change *Risk Analysis*, 32(6), 957-972..

Risks	Opportunities
Increased summer temperatures may lead to increased risk of mortality and morbidity due to heat.	Increased winter temperatures may lead to decreased levels of mortality and morbidity due to cold.
Increased flooding would increase the risk of deaths, injuries and people suffering from mental health effects as a result of the impacts of flooding.	Increased summer temperatures combined with increased periods of time spent outdoors could increase vitamin D levels and help to improve physical and mental health of people.
Increased ozone levels by the end of the century could lead to an increased risk of mortality and respiratory hospital admissions	
Increased summer temperatures combined with increased periods of time spent outdoors may lead to an increased risk in the number of skin cancer cases and deaths.	
Increased temperatures and changed rainfall patterns may lead to an increased health risk from water, vector and food borne diseases.	
Increased sea temperatures may lead to increased marine pathogens and harmful algae blooms with a consequent negative effect on human health.	

Source: UK Climate Change Risk Assessment (2012)

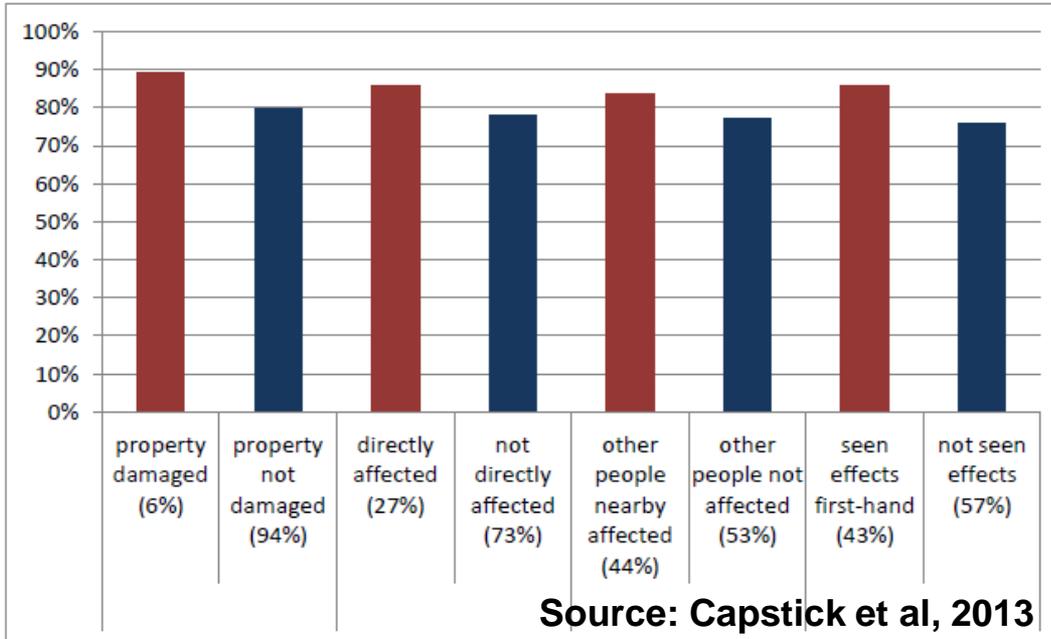
# Perceptions of climate change and willingness to save energy related to flood experience

A. Spence<sup>1\*</sup>, W. Poortinga<sup>2</sup>, C. Butler<sup>3</sup> and N. F. Pidgeon<sup>3\*</sup>

One of the reasons that people may not take action to mitigate climate change is that they lack first-hand experience of its effects. From this perspective, individuals who have been directly affected by flooding are more likely to be linked to

make the issues less distant and more tangible. It is suggested that experiencing some kind of (generally negative) event could be attributed to climate change would lead to a more helpful. However, goal-setting theory<sup>17</sup> highlights that setting concrete, specific goals in increasing in the belief that actions will lead to a better future.

Figure 9 Difference between levels of concern about climate change on Wales according to types of experience of flooding<sup>73</sup>



## Ceredigion June floods: 15 families able to return home



Emergency services rescued people trapped in their homes in Talybont during June's flooding

Some of the people forced out of their homes in Ceredigion by the summer's severe flooding have started to return.

Ceredigion council has established that 15 households evacuated in the north of the county in June have moved back.

Some residents were warned they would have to leave their homes for up to six months after a month's worth of rain fell in 24 hours on 8 and 9 June.

But 14 families who approached the council for help are still being forced to live elsewhere.

Aberystwyth and the nearby villages of Talybont, Dol-y-Bont, Capel Bangor, Penrhynoch and Llandre were among the areas affected by June's deluge, including some caravan parks.

### Related Stories

Council flood costs 'problematic'

County flood appeal tops £100,000

Flood victims could fund defences



# The 2013/2014 Winter Floods

- **Exceptional run of severe Atlantic storms**
- **December and January the wettest months on record (Scotland/South East)**
- **Widespread national disruption (costal and river flooding) - though major impacts localised**
- **Multi-agency response (up to PM and Cabinet Office)**
- **Sustained media attention**

**Table 1** Number of respondents in the national and flood-affected area samples.

	Number of respondents
<b>National Sample</b>	1,002
<b>Flood Affected Areas</b>	
<i>Aberystwyth</i>	200
<i>Dawlish</i>	198
<i>Gloucester to Tewkesbury</i>	198
<i>Hull</i>	200
<i>Sunbury to Windsor</i>	199

All Fieldwork – September to October 2014



# Role of flooding as an influence on climate change perceptions



- Design issues critical to detecting influence of flood experience on climate change perceptions
- Much previous research in this area but causation very hard to establish
- Important to measure climate change perceptions and then take 'objective' measures of flood experience

# Survey Design

Unprompted views on 'major national issues'



Key indicators of climate change perceptions



Further measures of climate change attitudes



Measures of flood 'experience'



Views on the flooding, impacts, causes, emotions and possible links with climate change



Further psychometric (e.g. values) and demographic measures

# Flood experience measures in the survey

- Q25. Was your current or previous property affected by the floods between November 2013 and February 2014? This could include any land surrounding your home such as a garden or drive. If you live in a flat it might include communal areas such as a car park or hallway. Please also answer yes if you stopped the water from flooding your property by using some form of flood defence such as sand bags or a flood gate.

	Yes	3%
	No	97%
	Don't know	0%

**The *most directly affected* (n=135):**

- (a) reside in the oversampled areas, and**
- (b) report their property was directly affected by the flooding events (Q25 in survey).**

	National sample (n=1,002); weighted	Most directly affected respondents (n=135); weighted
<b>Gender</b> (% male)	49%	60%
<b>Age</b>		
- 16-24	15%	23%
- 25-34	16%	11%
- 35-44	15%	16%
- 45-54	19%	18%
- 55-64	14%	11%
- 65-74	12%	15%
- 75+	9%	7%
<b>Social Grade<sup>a</sup></b>		
- AB	22%	34%
- C1	31%	38%
- C2	21%	13%
- DE	26%	16%

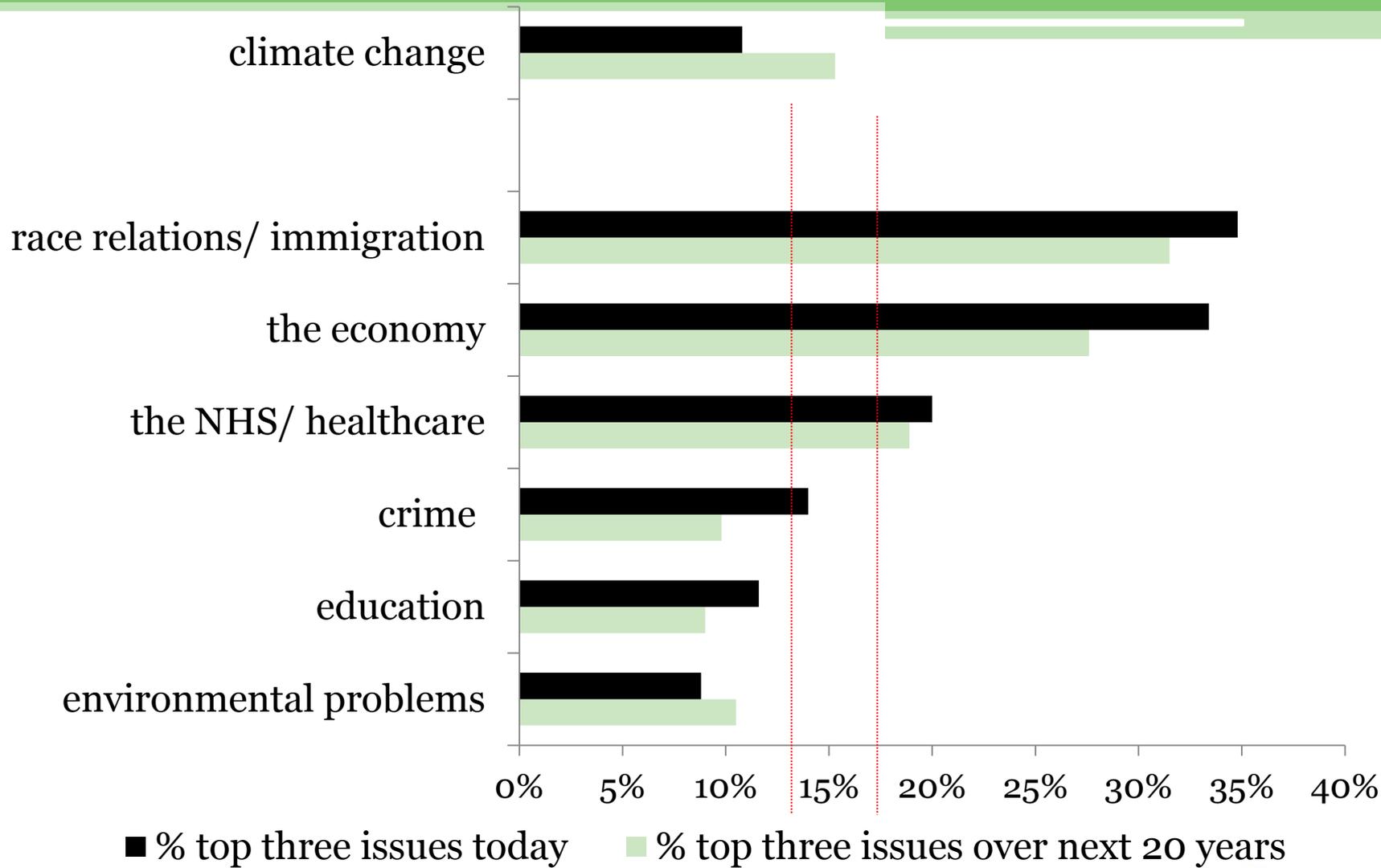
# The *most directly affected* sample

**Overall, these respondents had a more direct and salient experience of the flood events compared to the national sample.**

**Travel/work disruptions: 72%** in the most directly affected sample vs. **20%** in the national sample

**Disruption to services: 55%** in the most directly affected sample vs. **7%** in the national sample

**Impacts on other people in area: 91%** in the most directly affected sample vs. **14%** in the national sample



# Comparing national and flooded samples

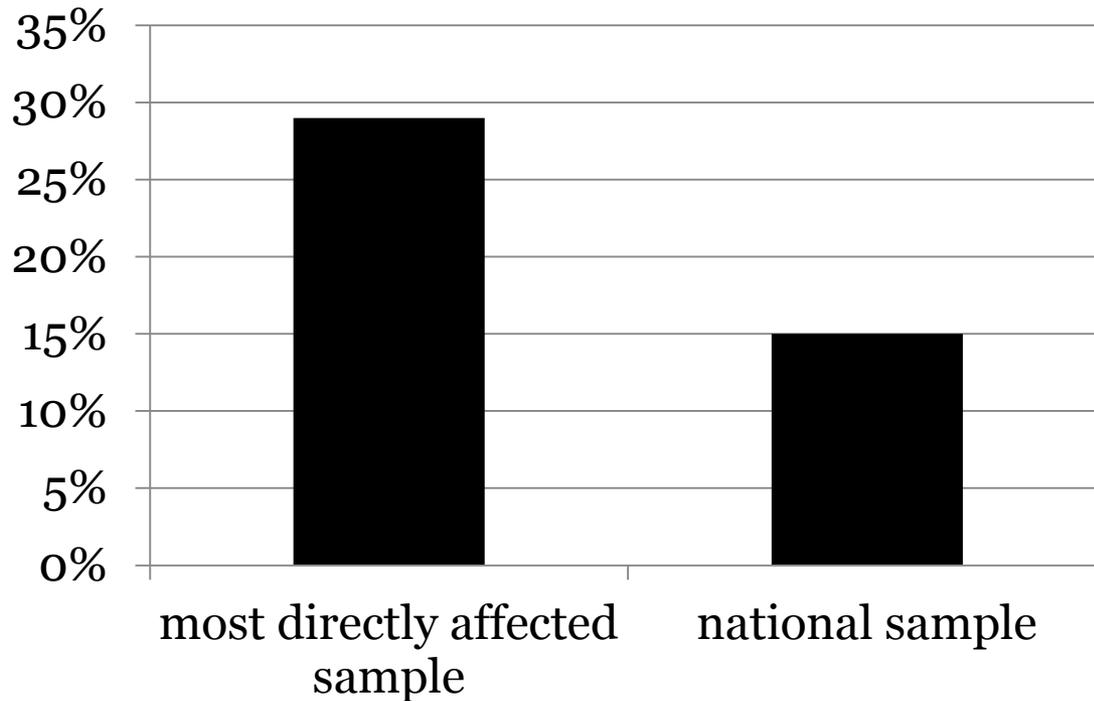
Construct	Question/Item	National sample (n=1,002)	<i>Most directly affected</i> sample (n=135)	Significance level
<b>Climate change concern</b>	How concerned are you about climate change?	68% fairly/very concerned	78% fairly/very concerned	** , $p = .002$
	Have you become more or less concerned about climate change over the past 12 months?	26% more concerned	46% more concerned	*** , $p < .000$

# Comparing national and flooded samples

Construct	Question/Item	National sample (n=1,002)	Most directly affected sample (n=135)	Significance level
<b>Salience</b>	I worry about climate change on a day-to-day basis	18% agree	21% agree	Non-significant ( $p = .242$ )
	What are the three most important issues facing the UK today?	11% mentioned climate change	18% mentioned climate change	Non-significant ( $p = .380$ )
	What are the three most important issues facing the UK in the next 20 years?	15% mentioned climate change	29% mentioned climate change	** $, p = .004$

# Comparing national issue salience on 20-year horizon

Public perceptions of climate change in Britain following the winter 2013/2014 flooding



A report by the Understanding Risk Group, Cardiff University

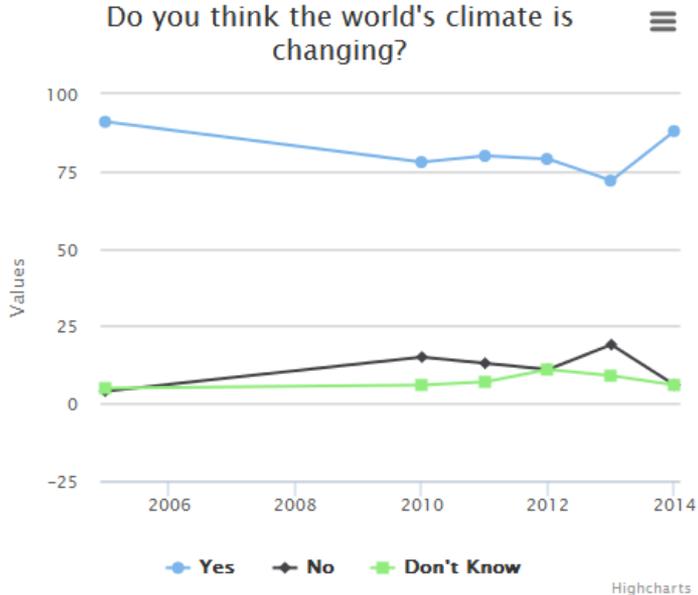
## Britons believe in climate change... but do they care?

Survey shows 88 per cent of public believe climate is changing yet a record low of just 18 per cent are "very concerned" about it

[f](#) 44 
 [t](#) 183 
 [p](#) 0 
 [in](#) 15 
 [g+](#) 242 
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Belief levels are up significantly from only 72 per cent in early 2013, according to a survey of 1,002 people conducted as part of Government-funded research by the Universities of Cardiff and Nottingham.



29 January 2015 Last updated at 12:23

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## Climate concern 'linked to floods'

By Helen Briggs  
 Environment correspondent, BBC News



## British belief in climate change on the rise, research finds

Poll finds 15% say climate change is major threat in next two decades, jumping to 29% for people with direct recent experience of flooding



Floods in Datchet, Berkshire, on 11 February 2014. Many in Britain associate floods with changing climate. Photograph: Graham Turner/The Guardian

Advertisement

# Concluding Comments

- **More work to be done (internationally and over time)**
- **Socio-political factors important, alongside some impacts of extreme weather**
- **Qualitative research (beliefs about climate and energy practices) brings more textured understandings**





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## Website

[www.understanding-risk.org](http://www.understanding-risk.org)

