

Rereading Public Opinion Polls on Climate Change in the UK Press

CORINA HÖPPNER

Oxford University, Environmental Change Institute

WSL Swiss Federal Institute for Forest, Snow and Landscape Research

This article extends the research on media communication of climate change by exploring UK newspapers' representations of public opinion polls. Based on a rereading of main stories on opinion polls between 1989 and 2008, the article shows how polls have been employed by "prestige" newspapers and tabloids to (a) close or keep open the public debate on the reality of anthropogenic climate change, and (b) to propagate favored responses to climate change at the policy and individual level. Furthermore, newspapers' representations of these opinion polls have conveyed questionable images of a denying, apathetic, and hypocritical public. The article concludes that such images potentially compromise the development of new links among citizens, scientists, and politicians and efforts to widen public engagement with climate change.

Introduction[°]

The study of public views on climate change has grown to an important strand of academic and market research (e.g., Bord, Fisher, & O'Connor, 1998; Downing & Ballantyne, 2007; Lorenzoni, Leiserowitz, De Franca Doria, Poortinga, & Pidgeon, 2006; Lorenzoni & Pidgeon, 2006). Focusing on the latter, Nisbet and Myers (2007) find in their analysis of public opinion polling in the United States that over the past 20 years surveys have covered a range of themes from public awareness of global warming over perceptions of science to public support for specific policies.

Undoubtedly, polls and their media representations have their place in a representative democracy by providing opportunity and place for public expression (Lewis, Wahl-Jorgensen, & Inthorn, 2004). Whether the liaison between opinion polls and the media establishes citizens as active subjects in democratic debate or merely as objects that are maneuvered to produce favored realities has been extensively discussed by public opinion researchers (Edelman, 1971; Lippman, 1997; Manza, Cook & Page, 2002; Paletz & Entman, 1981).

Corina Höppner: hoepfner@wsl.ch

Date submitted: 2009–11–20

[°] This work was supported by the Swiss National Science Foundation. I would like to thank Anabela Carvalho, Max Boykoff, Adela Maciejewski Scheer, Amanda Smith, the anonymous reviewers, and Larry Gross for their advice and valuable comments.

Copyright © 2010 (Corina Höppner). Licensed under the Creative Commons Attribution Non-commercial No Derivatives (by-nc-nd). Available at <http://ijoc.org>.

In the context of climate change, however, the considerable body of media communication studies has hitherto not critically probed media representations of public opinion polls. This is unfortunate, as many writers maintain that mass media can substantially influence policy agendas and readers' understanding of issues and related public opinion (Boykoff, 2007; Carvalho & Burgess, 2005; Doulton & Brown, 2009; Lester & Cottle, 2009; Paletz & Entman, 1981; Sampei & Aoyagi-Utsui, 2009; Wilson, 1995). Critical public opinion researchers have furthermore argued that the questions asked in opinion polls are not developed in an ideology-free room, but that they mirror and reproduce contemporary thinking and stances on issues (for a comprehensive review, see Lipari, 2008). This begs the question as to whether and how mass media outlets use public opinion polls in the ongoing debate on anthropogenic climate change. By addressing this vital question, the article builds on and extends earlier analyses that focus on how newspapers' normative commitments and journalistic conventions shape their use of data sources and rhetorical-methodological devices to produce, replicate, and steer discourses on climate change (Antilla, 2005; Boykoff & Boykoff, 2007; Carvalho, 2007; Carvalho & Burgess, 2005; Doulton & Brown, 2009).

This article combines methods from both opinion poll research and textual discourse analysis to explore the use of opinion polls on climate change in major UK newspapers between 1988 and 2008. Opinion poll researchers are traditionally concerned with investigating the themes around which poll data are published and how well media reports represent the data. Discourse analysts are more interested in examining the stories and meanings that are developed around the data, the factors shaping newspapers' representations of opinion poll results, and the ways media representations of opinion polls may be shaped to feed ongoing debates on climate change. In this way, the article shows that newspapers present opinion polls (a) to qualify or question the scientific consensus on anthropogenic climate change, (b) to mainstream normative baselines for individual behavior change, (c) to legitimize individual (in)action, and (d), to propagate favored recommendations for policy actions. Furthermore, findings suggest that the ways opinion polls have been used in the press have resulted in largely unproven images of a denying, apathetic and hypocritical public that potentially compromise the development of new links among citizens, scientists and politicians and that impede wider public engagement.

In the next section, the literature on the relationship between the mass media and opinion polls is briefly introduced. Using a sample of press articles that report exclusively on public opinion polls, the article then assesses the quality of poll reporting and identifies the general themes of coverage. Subsequently, Carvalho's (2008) framework for the textual analysis of media discourse is used to develop a deeper understanding of newspapers' representations of opinion poll results.

Public Opinion and the Media

By publishing opinion polls the media engage in at least two democratic functions (Suhonen, 1997). First, reportage informs readers about public sentiment and allows them to compare their own views with those of the population as a whole or of specific subgroups. Second, through the process of

publishing, opinion polls can guide and shape economic and political decisions, or at least they can delimit decision makers' room to maneuver.

Communication researchers, however, have developed manifold critiques of the ways that poll results have been presented and harnessed by the media (Edelman, 1993; Entman, 2004; Gollin, 1980; Herbst, 1992). Repeatedly, it has been pointed out that press coverage of opinion polls is not a simple one-to-one broadcasting of polls conducted by independent others. Rather, the media has become one among many institutions commissioning polls and thereby actively choosing and shaping topics and languages in which public opinion can evolve. "Critical" and "constructionist" assessments of public opinion polls stress that the production and interpretation of opinion polls are influenced by the specific economic and political context in which they are embedded (Lipari, 2000). In concert with the journalistic practice of selecting and highlighting information, media representations of polls are deemed to arise from "strategic and haphazard interactions among media, government, events, and pollsters" (Entman & Herbst, 2000, p. 211). As products of such interactions and their wider context, polls reproduce the scope and language of salient debates and can thus be used to underpin debate-related claims.

Public Opinion Polls on Climate Change in the UK Press

In the following section, the sample used to explore press presentations of climate change-related opinion polls is described and analyzed for both the quality and general themes of reporting.

Data Collection

The present analysis includes both UK "prestige" newspapers as well as tabloids to cover a wide range of "ideological cultures" and readerships (Boykoff & Mansfield, 2008; Carvalho, 2007). The sample was compiled using LexisNexis and the Boolean query *climate change* (or *global warming* or *greenhouse effect*) and *public* and *poll*. Results were cross-checked using the term *survey* instead of *poll*. The search for a period of 20 years from December 1988 to December 2008 returned 1,146 results. *The Guardian* (N=317), *The Guardian's* Sunday broadsheet *The Observer* (N=108), *The Times/Sunday Times* (N=280), *The Independent/Independent on Sunday* (N=195), and *The Daily Telegraph/Telegraph on Sunday* (N=118) represented prestige papers, while *The Daily Mail/Mail on Sunday* (N=128) is one of the leading UK tabloids. These newspapers were selected because they were covered by previous studies that examined press communication on climate change—on which the present research aims to build and extend (Boykoff, 2008; Carvalho, 2007; Doulton & Brown, 2009). In the sample, *The Times* and *The Telegraph* are conservative papers. *The Guardian* and (to a less degree) *The Independent* are considered more leftist. *The Telegraph* is presently the highest-selling British "prestige" newspaper and politically leaning to the right. *The Daily Mail* was Britain's first popular or working-class newspaper to appear daily (for average daily circulation of newspapers, see Boykoff & Mansfield, 2008). *The Daily Mail* is considered to have a right-wing bias and has generally been supportive of the Conservative Party. However, with respect to some issues, such as genetically modified food, the tabloid shares its stance with left-wing critics.

A first scanning of retrieved articles revealed that the majority only briefly referred to a previously published poll result or presented polls that were not, in fact, related to climate change. Only 53 articles presented specific public opinion polls on climate change as a main story. At first sight, this number appears comparatively low. However, these articles are key to a deeper understanding of newspapers' use of polls because they manifest how poll results are selected, highlighted, de-emphasized or omitted as well as linked to other sources to develop stories and to embed messages. Such articles are furthermore considered to be most comprehensive and accurate in displaying poll items and in disclosing methodological information (Hardmeier, 1999). An in-depth analysis of these articles can thus be expected to be particularly insightful. Through an emphasis on polls as matters of fact, these stories can shape readers' perception of where the public stands on a matter. Furthermore, such accounts of public sentiment usually reach larger segments of the population by repeated reporting and diffusion in the media system. The following analysis thus focuses on these 53 articles that report exclusively on public opinion polls on climate change.

Table 1 shows that most of the 53 articles were published between 2005 and 2008. Between 1989 and 2008, *The Guardian* delivered 22 main stories on polls. *The Independent* published 10 articles between 1989 and 2008, followed by *The Times* with eight articles between 2005 and 2008. *The Daily Telegraph* had six articles in 2005 and 2008, *The Daily Mail* produced four articles in 2007 and 2008, and *The Observer* published three articles between 2005 and 2008.

Table 1. Sample of 53 articles reporting exclusively on climate change-related public opinion polls in chronological order.

Year	Article	Newspaper, Date and Headline	Polling Body/ Commissioning Body	Information Disclosed
1989	1	<i>The Guardian</i> , April 6, 1989 "Nuclear waste tops green issue list for voters in European elections"	Ipsos MORI/WWF, Friends of the Earth, Council for the Protection of Rural England	1,902 adults in 146 constituencies
	2	<i>The Independent</i> , June 13, 1989 "Shoppers would pay extra for green goods"	Mintel and NOP/-	1,000 adults, April 1989
	3	<i>The Guardian</i> , July 6, 1989 "A time warp of ignorance: Does the earth go round the sun? Crucial decisions increasingly require a grasp of science but a new report reveals a dismal level of public understanding of even the most basic questions"	Independently conducted scientific survey	2,009 adults, 1988
	4	<i>The Independent</i> , July 6, 1989 "Britons reveal ignorance of science"		
	5	<i>The Independent</i> , July 14, 1989 "Energy conservation message, not getting through"	NOP/Greenpeace and FoE, Association for the Conservation of Energy	1,000 adults
	6	<i>The Independent</i> , July 18, 1989 "Nuclear power switch-off for electricity flotation"		
1990	7	<i>The Guardian</i> , September 14, 1990 "Must do better – As the Government prepares new environmental legislation, a major poll reveals what the public believes should be done"	ICM/The Guardian	1,418 people aged 18+ in 103 parliamentary constituencies, July 20–21
1991	8	<i>The Guardian</i> , February 28, 1991 "Science blamed for environmental problems: Survey reveals doubts on food, praise for medicines"	-/Edinburgh Science Festival	1,000 people at six centres in Scotland
	9	<i>The Independent</i> , September 2, 1991 "Public enthusiastic for clean energy"	Gallup/Friends of the Earth, British Market Bureau, Greenpeace	1,010/1,085 adults
	10	<i>The Guardian</i> , November 22, 1991 "People have their say – How environmentally-friendly are we? Are green concerns taking the place of religion?"	British Social Attitude Survey/-	April 1991

1995	11	<i>The Times</i> , May 8, 1995 "True or False?"	International survey of public understanding	25,000 people in 20 countries
2005	12	<i>The Times</i> , January 18, 2005 "Poll shows renewed support for a nuclear programme"	Ipsos MORI/Nuclear Industry Association	-
	13	<i>The Guardian</i> , June 21, 2005 "Global warming: The message hits home"	ICM/The Observer	1,010 adults aged 18+, June 10-12, telephone
	14	<i>The Guardian</i> , June 21, 2005 "Blair told act now on climate; G8 countdown: Poll shows public fears on global warming; Guardian's unique Africa project"		
	15	<i>The Observer</i> , June 26, 2005 "Turning the Tide: Public Opinion; Poll give Blair weapon to fight for the climate at G8 summit"		
	16	<i>The Observer</i> , June 26, 2005 "Britain backs curb on cheap flights"		
	17	<i>The Daily Telegraph</i> , November 6, 2005 "Britons back new nuclear plants"	Ipsos MORI/EDF Energy	-
	18	<i>The Daily Telegraph</i> , November 26, 2005 "A nation of careless travellers. A new survey suggests we give little thought to making tourism sustainable."	Mintel/First Choice Tour Operator	1,000 adults who had taken an overseas holiday since 1994
2006	19	<i>The Guardian</i> , December 27, 2005 "Voters split over nuclear power: ICM poll reveals task facing Blair to persuade public of need for more plants"	ICM/Guardian	1,004 adults aged 18+, telephone, December 15-18, 2005
	20	<i>The Times</i> , January 17, 2006 "British swing back to nuclear power"	Ipsos MORI/UEA	1,491 people
	21	<i>The Independent</i> , January 2006 "Opposition to nuclear energy on the wane"		
	22	<i>The Guardian</i> , February 22, 2006 "Most Britons willing to pay green taxes to save the environment: Poll finds backing for lifestyle sacrifices: Cameron greener than Blair or Brown, say voters"	ICM/The Guardian	1,002 adults aged 18+, February 17-19
	23	<i>The Independent</i> , May 1, 2006 "Public backs law to enforce cuts in emissions; ,The vast majority of people want the Government to take action"	-/Friends of the Earth	-

	24	<i>The Times</i> , November 8, 2006 "The green divide"	Populus/The Times	1,510 adults =+18 November 3-5
	25	<i>The Guardian</i> , November 6, 2006 "Global warming: Climate change affects buying habits"	-/Carbon Trust	-
	26	<i>The Independent</i> , November 6, 2006 "Seven out of 10 fear UK energy supply are at risk"	YouGov/EDF Energy	-
2007	27	<i>The Guardian</i> , March 17, 2007 "Who won the green war this week? No one, says poll: Near dead heat between Cameron and Brown: 36% of voters trust neither of likely party leaders"	ICM/The Guardian	848 adults aged 18+, March 14- 15
	28	<i>The Independent</i> , April 2, 2007 "The green gap between concern and action"	-/Energy Saving Trust	-
	29	<i>The Times</i> , April 25, 2007 "Most Britons believe that airlines are failing to clear the air"	Populus/The Times	1,300 adults
	30	<i>The Daily Telegraph</i> , May 4, 2007 "Gardeners see climate change in own back yards"	-/Waste and Resources Action Programme	1,000 gardeners
	31	<i>The Guardian</i> , May 26, 2007 "Flying addicts take dim view of air taxes in poll: Climate fear not translated into action, ICM shows just 13% been prompted to end flights."	Ipsos MORI/The Guardian	1,003 aged 18+, May 18- 20
	32	<i>The Guardian Unlimited</i> , June 18, 2007 "Public fears, greenwash from industry"	-	2,734 in Britain and America
	33	<i>The Guardian</i> , June 19, 2007 "Consumers distrust business on climate change: Environmental message falls on deaf ears Public prefers scientists and green campaigners."		
	34	<i>The Guardian</i> , June 28, 2007 "Come on, let's save the world!: A new survey suggests teenagers aren't that interested in climate change."	-/Defra	11 17-year-olds
	35	<i>The Guardian</i> , July 3, 2007 "Public "still skeptical on climate change"	Ipsos MORI/-	2,031/2,032 adults aged
	36	<i>The Telegraph</i> , 3 July, 2007 "Public in denial about climate change"		16+
	37	<i>Daily Mail</i> , July 4, 2007		

	38	"Voters haven't warmed to climate change" <i>The Guardian</i> , August 12, 2007	-/Defra	3,600 people
	39	"Millions say it is too much effort to adopt greener lifestyle" <i>The Times</i> , August 24, 2007	-/Norwich Union	1,500 people
	40	"Eco-slackers feel the pressure to keep up with Green-Joneses" <i>The Daily Telegraph</i> , August 24, 2007		
	41	"Green Guilt causing neighbors to fib" <i>The Guardian</i> , August 27, 2007	MacIntyre Hudson	378 people in business (interpreted as the public)
	42	"No change despite CO2 fears" <i>The Times</i> , August 29, 2007	Populus/The Times	-
	43	"Public backs nuclear energy to help power Britain's future" <i>Guardian Unlimited</i> , September 3, 2007	YouGov/Taxpayers Alliance	-
	44	"Climate fears exploited for tax hikes" <i>The Guardian</i> , October 1, 2007	Ipsos MORI/-	-
	45	"Poll shows big majority back gas-guzzler tax" <i>Mail on Sunday</i> , November 4, 2007	YouGov/EDF Energy	More than 4,000 adults
	46	"Nuclear 'yes' outnumbered the no vote Poll boost for Brown as decision over power station looms" <i>Mail on Sunday</i> , November 25, 2007	YouGov/Travelsupermarket .com and Mail on Sunday	6,093 adults
2008	47	"Flying in the face of our principles?" <i>The Guardian</i> , February 4, 2008	-/Co-op	Circa 100,000 members and customers
	48	"Shoppers care more about animals than climate: Co-op conducts a massive survey of shoppers' ethics: New responsible retailing policy is based on results." <i>The Daily Mail</i> , March 1, 2008	ICM/Daily Mail	-
	49	"Shoppers' huge NO to free bags; Despite mail poll, Tesco signals it may defy the PM" <i>The Times</i> , April 2, 2008	Populus/The Times	-
	50	"Shoppers say no to plastic bag levy to tackle climate change" <i>The Independent</i> , May 2, 2008	Opium Research LLP/-	2,002 adults
		"Majority of Britons resent paying green taxes, poll finds"		

51	<i>The Daily Telegraph</i> , June 14, 2008 "Britons: More mean than green Survey shows that UK travellers are swayed by cost, not global warming"	YouGov/independent research	-
52	<i>The Observer</i> , June 22, 2008 "Poll: Most Britons doubt cause of climate change"	Ipsos MORI/The Observer	1,039 adults
53	<i>The Guardian</i> , July 2, 2008 "Climate more urgent than economy, say voters"	ICM /The Guardian	1,002 adults aged =/+18, June 27-29, 2008

Note: LexisNexis covers *The Guardian* from July 14, 1984; *The Times* from July 1, 1985; *The Independent* from September 19, 1988; *The Observer* from October 7, 1992; *The Daily Mail* from January 1, 1992; and *The Daily Telegraph* from October 30, 2000.

Quality of Opinion Poll Reporting

Following the standard approach to assess the quality of poll reporting, the 53 selected articles were analyzed for disclosure of poll information (Andersen, 2000; De Vreese & Semetko, 2002; Hardmeier, 1999). Figure 1 shows that while information on the commissioning and polling body as well as the sample size were disclosed in the majority of cases, only half of the articles gave further specifications on the target sample. Even fewer reports noted the date(s) in the field, the interview method, and the sampling method. Strikingly, only a very small number of articles disclosed the exact wording of questions and of response options. Reportage of the margin of error (amount of random sampling error) and reflections on possible limitations of the findings also were absent.

Although there were some differences between newspapers, none was particularly comprehensive in reporting these details. Thus, their reporting considerably deviates from disclosure standards put forward by other media outlets and associations in the UK and elsewhere (e.g., British Broadcasting Corporation, American Association for Public Opinion Research, Canadian Daily Newspaper Publisher Association).

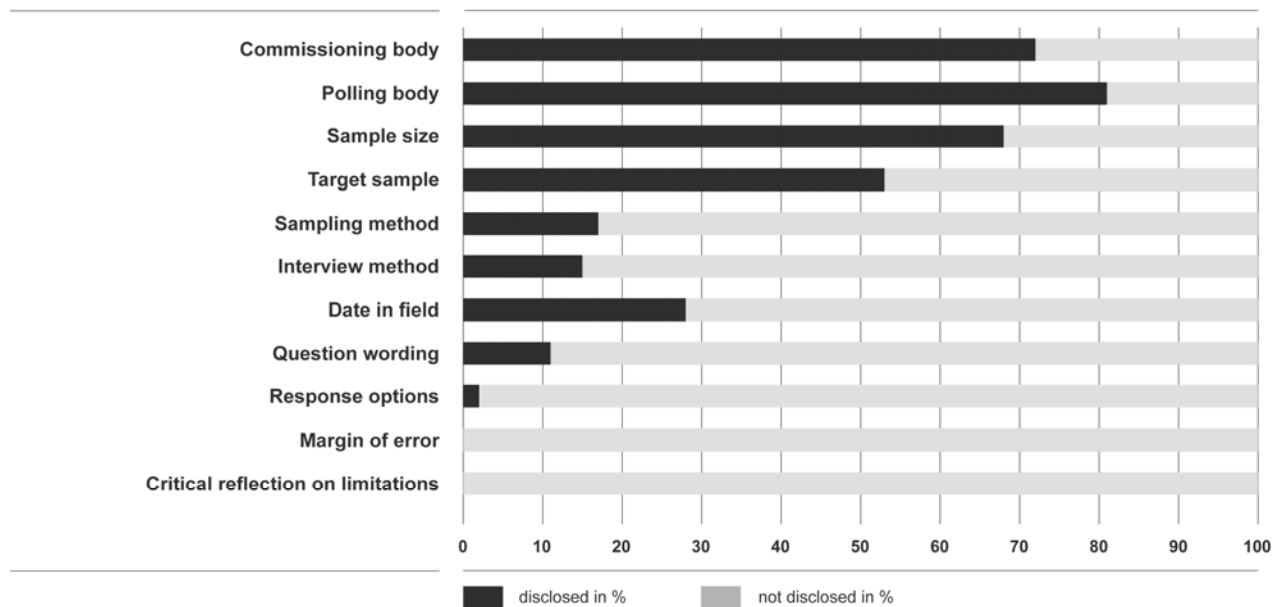


Figure 1. Information disclosure in 53 articles presenting public opinion polls on climate change as their main story.

Themes of Opinion Poll Reporting

Through further analysis of the 53 articles, eight general themes were identified:

1. Acceptance of the presence of anthropogenic climate change.
2. Knowledge and understanding of the science of climate change.
3. Individual consumer behavior and individual behavior change.
4. Support for national engagement in international climate policy and action.
5. Support for domestic policies and climate change as policy priority
6. Acceptance of climate related taxes.
7. Perception of industry and business actions against climate change.
8. Acceptance of nuclear power to act on climate change.

As Table 1 shows, there were only a few main stories between 1989 and 1991. These articles, published by *The Guardian* and *The Independent* exclusively, focused on consumers' views on green goods and people's knowledge of the "greenhouse effect" or "global warming." Furthermore, the two newspapers paid particular attention to public acceptance of nuclear power to diminish the greenhouse effect. Interestingly, both papers reported almost exclusively on polls commissioned by others at that time.

Until 2005, there is a remarkable absence of articles explicitly reporting on opinion polls. From then onward, coverage grew in both volume and diversity. In 2005, public support for national engagement in international climate policies and the acceptance of the presence of anthropogenic climate change emerged as themes. One year later, *The Guardian* and *The Independent* drew attention to public support for domestic climate policies. In 2007, alongside a general increase in climate change coverage (e.g., Boykoff, 2008), poll reporting reached a peak, covering all eight themes. Poll results on consumer behavior, the acceptance of tax policies, and the presence of anthropogenic climate change remained prominently featured in 2008. Concurrently, public stances on nuclear energy and public support for national engagement in international policies regressed in favor of public views on the priority of climate change as a domestic policy issue. Noteworthy is that *The Guardian*, *The Times*, and *The Independent* as well as *The Daily Mail* increasingly commissioned the polls they reported on and established client relationships with Ipsos MORI, ICM, and Populus as leading market research institutes.

While *The Guardian* and *The Independent* covered all or nearly all themes, the range of *The Times*, *The Telegraph*, and *The Daily Mail* was clearly narrower. Overall, individual consumer behavior (n=23, 43%), the acceptance of the presence of anthropogenic climate change (n=14, 26%), and public views on nuclear power (n=9, 17%) were the most prevalent topics across press outlets. Given their relative prominence and that they were usually presented as intertwined aspects, the following analysis focuses on the first two of the aforementioned themes.

Rereading Opinion Poll Coverage

The following textual analysis departs from the assumption that the production and interpretation of opinion polls are embedded in actual discourses. Examining the specific presentation of opinion polls thus allows to interrogate their ideological grounding (Lippmann, 1997; Manza et al., 2002), to determine the validity of pictures and messages conveyed, and to shed light onto factors shaping the media's representation of the public. More specifically, the analysis is informed by Carvalho's (2008) framework for the textual analysis of media discourse and examines the following topics:

1. How newspaper articles present, select, relate, and value poll data.
2. The objects (e.g., policies, scientific consensus, business action, specific behaviors) they focus on.
3. The actors (e.g., public, scientists, politicians, pollsters) they select to interpret poll results and their policy recommendations.
4. The discursive strategies they use to present polls and to construct meanings (e.g., rationalizing/irrationalizing, legitimizing/deligitimizing, or empowering/disempowering actors and their opinions to justify political actions, politicize/depoliticize issues, or open and close debates).
5. Whether different ideological standpoints can be identified through the simultaneous analysis of points 1–4.

In the following, the synchronic coverage of a poll in different newspapers is examined along these five points to compare newspapers' representations of public acceptance of the presence of anthropogenic climate change. The analysis of alternative accounts should bring to light the relevance of newspaper ideology for reporting (Carvalho, 2008). Subsequently, a diachronic analysis of articles explores how newspapers' evaluation of individual consumer behavior changed over time. Finally, a comparative analysis probes differences in newspapers' readings of consumers' (in)action.

Struggle Over the Presence of Anthropogenic Climate Change

Based on an independently conducted Ipsos MORI poll from June 2007, *The Guardian*, *The Telegraph*, and *The Daily Mail* used different discursive strategies to develop stories on the public acceptance of the presence of anthropogenic climate change.

Keeping the Debate Closed—Irrationalizing and Deligitimizing Skepticism

"Public 'still skeptical on climate change'" headlined *The Guardian* (July 4, 2007) and reported in the first paragraph, "The UK public remains skeptical about how much impact climate change will have on the country and believes the problem is being overstated by politicians and scientists . . ." The article's headline mainly rested on the finding that "56% believe [that] scientists themselves are still questioning climate change and believe there is a live debate going on, when in fact there is virtual scientific consensus."

Strikingly, *The Guardian* centered its reporting around the 56% of people who agreed with the statement ". . . many leading experts still question if human activity is contributing to climate change" instead of reporting that 69% disagreed and 18% agreed with ". . . human activity does not have significant effect on the climate" (<http://www.ipsos-mori.com/content/polls-07/climate-change-survey.ashx>).

In this way, the article not only kept quiet about available counterevidence to its message but also misinterpreted people's evaluation of what others think as their own opinion or as their identification with a certain opinion (for distinction, see Lipari, 2000). In this case, the muddling of perspectives was seriously misleading as respondents' perception of the general debate as controversial was taken as personal identification with voices that cast doubt on the human causes of climate change.

To develop the story of public skepticism, the article highlighted that the public thought the problem had been overstated. A comparison with the original poll questions suggests that this conclusion drew on the 22% of the respondents who agreed ". . . too much fuss is made about climate change nowadays." Agreeing to this statement, though, does not necessarily mean that people do not perceive climate change as a serious issue. Moreover, the article failed to mention that 75% of the respondents disagreed with this statement, which could mean that people thought the situation was just about right, or

that there has not been enough fuss. Also, noteworthy is that Ipsos MORI, in its own report, presented this result in a somewhat different light, writing that “only 22% believe . . . that the threat of climate change has been exaggerated” (Downing & Ballantyne, 2007, p. 13).

Although the poll did not actually deliver the empirical evidence, it was presented as a proof for the public’s rejection of the Intergovernmental Panel on Climate Change (IPCC) consensus over the very high likelihood of anthropogenic influences. This was arguably alarming news for a newspaper that had previously published a leading article titled “Global warming-message hits home” (June 21, 2005, article 13). Based on a poll conducted for *The Guardian* by ICM, the article had claimed that, in concurrence with a “rock-solid scientific consensus on global warming” that should allow no doubts, there was now a “universal public belief that climate change exists.” By pointing at this finding, the article had called for government to act and to move the issue forward at the G8 summit in 2005.

However, in 2007, poll data showing public perception of expert debate as controversial yielded opportunity to criticize and deligitimate voices dismissing the “rock-solid scientific consensus.” To attach this message to the poll data, the *Guardian* article “Public ‘still skeptical on climate change’” (July 4, 2007) included the following comment by Sir David Read, vice president of the British Royal Society:

It is crucial to emphasise that the vast majority of climate scientists believe that humans are having an unprecedented effect on our climate . . . People should not be misled by those that exploit the complexity of the issue, seeking to distort the science and deny the seriousness of the potential consequences of climate change.

Clearly, the article established the IPCC science as legitimate authority over the reality and severity of anthropogenic climate change and used a depoliticized framework to interpret public responses. In such a framework, scientists’ consensus marked the closure of the debate and suspended any room for rational doubts by the public or any other actor. By choosing Sir David Read’s comment, the alleged rejection of the scientific consensus by the public was depicted as a mere consequence of manipulation rather than a result of rational judgement. In this way, the article framed skepticism as irrational and biased, which disqualified the public’s voice in the matter. At the same time, however, the evoked picture of a misled public compellingly underpinned critique of skeptical voices on the IPCC consensus and the attention they had received by other media outlets in 2007 (e.g., Channel 4, March 8, 2007, “The Great Global Warming Swindle”).

Keeping the Debate Open—Rationalizing and Legitimizing Skepticism

The Telegraph (July 3, 2007) headlined “Public ‘in denial’ about climate change” and wrote “although the majority of people accept the climate is changing, it is not a priority for them.” The article continued by reporting that people were more concerned about crime, immigration, and national health

care and that “even local issues such as traffic, litter, graffiti, and even dog mess registered higher than climate change.”

Originally in the same response option as “litter”—an issue of continuously high concern among the UK public—dog mess was presented both as a separate local issue and as in direct competition to climate change. Methodologically, the presented comparisons were questionable as they referred to issues with very different levels of specificity and used ex-post separation of response options. However, the direct contrasting of the abstract issue of climate change with very specific and naturally immediate concerns effectively constructed a dramatic priority gap between climate change and other sociopolitical issues.

Ipsos MORI’s Head of Environment Phil Downing was quoted as saying

the public is still behind the scientific community and industry in recognising the severity of the threat we are facing. . . . The idea that the debate is over is not true. There are a lot of people out there who have not bought into the view that climate change is a threat.

In emphasizing different findings than *The Guardian* and by singling out the pollster’s comment, *The Telegraph’s* article developed a different interpretational frame and attached different meaning to public skepticism. More specifically, public doubt as to the severity of climate change was presented as a result of rational reasoning and priority making in a broader sociopolitical context in which climate change was realistically only one among many competing issues. Unlike *The Guardian*, *The Telegraph* did not depict public skepticism as “misled” or “wrong,” but as legitimate in a debate on sociopolitical futures that has to consider more than climate change and the scientific certainty about it. Rational skepticism, though, inhibited a definite closure of the debate over anthropogenic climate change. Keeping the debate open, despite the scientific consensus, has indeed been a key message of articles in *The Telegraph* during 2007 and 2008. For example, see “Climate change: Rising tides” (November 6, 2007) or “The ‘consensus’ on climate change is a catastrophe in itself” (August 31, 2008).

Finally, *The Daily Mail* (July 4, 2007) article titled “Voters haven’t warmed to climate change” went on to report that “The public are far more skeptical about global warming than most politicians claim . . .” According to the article, the research found that “one in five say they do not believe human behavior was altering the climate . . .” and highlighted the “huge gap between scientists and politicians and the views of ordinary men and women.”

This finding drew on the poll statement, “Human impact does not have significant effect on the climate” to which 18% of the respondents agreed and 69% disagreed. The article’s headline strikes us as standing in contradiction to these actual poll results. In citing the “one in five” ratio, the article considerably talked up the weight of the 18%, thereby widening and dramatizing the gap between the public’s views on one hand and the views of scientists and politicians on the other.

Interestingly, the IPCC Fourth Assessment Report (AR4) was not referred to as “scientific consensus” as it was in both *The Guardian* and *The Telegraph*, but only as “a report.” In this way, the article clearly challenged the authority of IPCC science. Simultaneously, the report strongly politicized skepticism by speaking of “voters” as legitimate supporters or challengers of “green measures.” Pointing to voters’ strong skepticism effectively underscored that the debate over the reality of anthropogenic climate change was far from being closed. This presentation concurs with the newspaper’s skeptical reportage on scientists and politicians that tried to mainstream anthropogenic climate change (Boykoff & Mansfield, 2008) and matches with the claims of other articles in *The Daily Mail* during 2007. For example, “Cool this hot air” (March 20, 2007) or “Why did RTE let itself become a vehicle for Gore’s propaganda?” (July 9, 2007).

Struggle Over Responses to Climate Change

This section explores how newspapers present opinion polls to discuss changes in individual consumer behavior as a response to climate change and the implications for politics. The bulk of coverage on climate change-related consumer behavior addressed the quantitative and qualitative dimensions of the changes in behavior and the reasons for people’s action or inaction. Again, the five-points framework—poll data, objects, actors, discursive strategies, and ideological standpoints—was used to analyze the accounts across newspapers.

Setting Normative Baselines for Change— Small Steps, Bigger Efforts and Lifestyle Changes

In 2006, *The Guardian* commissioned ICM with a poll and revived its “climate change hits homes” message under the headline “Most Britons willing to pay green taxes to save the environment” (February 22, 2006). This time, however, it was not public concern about climate change that was hitting home as it had back in 2005 (June 21, 2005, article 13), but “that small changes in people’s domestic lives can make a difference.” Interestingly, car use as well as avoiding flying on holidays were categorized as small changes just as changing light bulbs, turning down the heating, and switching off the television. In 2006, these small changes were judged as a positive development for they met normative expectations as to the extent of individual behavior change.

In 2007, after the IPCC AR4 had eventually highlighted the importance of lifestyle changes (IPCC, 2007), *The Guardian* published an article that headlined “Millions say it is too much effort to adopt greener lifestyle” (August 12, 2007). The headline was based on a poll question asking interviewees to agree or disagree with “It takes too much effort to do things that are environmentally friendly.” Commissioned by the UK Department for the Environment, Food and Rural Affairs (Defra), the poll showed that around a quarter of the 3,600 respondents agreed with the statement.

Clearly, the headline message differed from the actual poll result. The statement neither asked for "greener lifestyles," nor was it legitimate to generalize the result to "millions of people" without giving further details on the sample. While the weight of the people who agreed to the statement was talked up, results for the remaining 75% of respondents were not presented and thus devaluated. Noteworthy is the inconsistency and the vagueness in the assessment and description of individual behavior change. While "things that are environmentally friendly" can mean very small and isolated steps that might or might not be related to energy and emission reduction, "greener lifestyle" implies a much more holistic alteration of behavior with specific objectives (e.g., carbon emission reduction to mitigate climate change). Indeed, the particular conversion of the poll's language and results indicates a normative shift in the newspaper's claims from small steps in environmental friendly behavior to holistic and more radical lifestyle changes.

It was against this redefined target baseline for individual change that poll results on consumer behavior were subsequently judged in *The Guardian* and its sister broadsheet, *The Observer*. Interestingly, this normative shift in evaluating individual behavior furthermore translated into the production of corresponding poll questions. On June 22, 2008, an article (52) in *The Observer* made clear that, with the urgency of climate change, radical changes to lifestyles had become imperative. Emphasizing lifestyle changes rather than small steps was instrumental for the paper in sustaining political commitment to encourage fundamental change in times of looming "economic depression." The article pointed at the need for such sustained efforts by reporting on an opinion poll conducted on its behalf by Ipsos MORI that found "many said they did not want [*sic*] restrict their lifestyles and only a small minority believe they need to make 'significant and radical' changes such as driving and flying less."

While actual poll results were not disclosed, a look at the original survey revealed that people were not asked whether they wanted to restrict their lifestyles, but to indicate what they thought was "reasonable to expect people to do to tackle climate change." Interestingly, that 26% expected other people to "do recycling and turning lights off at home but no more," and that 47% chose the response option "Individuals should be expected to do things like recycling and turning lights off at home as well as *bigger actions*, e.g., in terms of what products they buy, how much they pay for things and how they drive and fly" [*italics added*] was negatively translated as people's unwillingness to "restrict their lifestyles." Disproportionate attention was given to the 13% of respondents who thought individuals should be expected to "*make significant and radical changes* to their lifestyle in terms of the products they buy, how much they pay for things and how much they drive and fly" [*italics added*]. The highly artificial and vague distinction between "small steps," "bigger actions," and "radical changes" in this question reflects underlying normative prepositions rather than being an empirically based scale for individual behavior. What exactly "significant and radical changes" to lifestyles were and how they differed from "bigger actions" was left to the imaginations of respondents, journalists and readers. While the serious implications of such methodological artifacts were not reflected upon in the article, the relative devaluation of "small steps" and "bigger actions" certainly dramatized the findings and increased the momentum of the article's political messages.

In comparison to *The Guardian* and *The Observer*, *The Daily Mail* and *The Times* did not emphasize a distinction between small steps and radical changes. In fact, both papers published opinion

polls on people's views on the government's plastic bag levy in 2008 (*The Times*, April 2, 2008, article 49; *The Daily Mail*, March 1, 2008, article 48), thereby limiting and channeling the discussion to what would have been regarded as small and insufficient steps in *The Guardian* and *The Observer* (*The Guardian* of September 13, 2007, asked, Can this really save the planet?: We are constantly told to switch the TV off standby, recycle our plastic bags and boil less water but does focusing on the small, easy steps distract us from the bigger picture, asks George Marshall. *The Guardian* of April 19, 2009, noted, "Plastic bag obsession is [a] carrier for environmental ignorance").

Reading Gaps Between Concern and Behavior—Defining and Legitimizing (In)action

Strikingly, all newspapers explicitly or implicitly dedicated articles to word-action or concern-behavior gaps.

In 2006, an article in *The Times* headlined "The green divide: Times poll shows the gulf between words and action on the environment" (November 8). To make the case for such a "gulf," percentages of self-reported behavior were paired with data on actual consumption. For example, the 76% of respondents who said "they recycle everything in the household they can" were contrasted with the fact that "only 22.5% of household waste is recycled in Britain." The 75% who said "they try to avoid unnecessary car journeys" were juxtaposed with the fact that "63% of all journeys are by car." While such comparisons of completely unrelated and thus unpairable data sets did not actually confirm the gulf between words and deeds, the headline of the article effectively put public concern in an ambiguous light. More specifically, environmental concern was given a hypocritical overtone, which arguably diminished its political weight. Furthermore, the reader learned that there was, in fact, no groundswell of people taking action. The portrayal of widespread environmental hypocrisy and the lack of personal action might indeed have helped readers to justify inaction and to mollify themselves, while others might have experienced frustration in the face of alleged mass apathy.

Based on a poll commissioned by the Norwich Union, on August 24, 2007, *The Times* ran "Eco-slackers feel the pressure to keep up with Green-Joneses," and *The Telegraph* headlined "Green guilt causing neighbours to fib." The only information given on the poll was that it had 1,500 respondents. Nevertheless, both papers took it as an occasion to advance the idea that people only pretend to be green to comply with what they perceive as socially acceptable and expected in their neighborhood. By picking out the Norwich Union poll result that "nine out of ten people admit telling 'little green lies' to avoid being labeled an eco-vandal," *The Times* revived the theme of environmental hypocrisy. Using the phrase "keeping up with the Joneses," the article furthermore implied that it is the concern about their social status in the neighborhood that drives what people say and do rather than environmental and ethical values. Accordingly, through (pretended) green consumption, people primarily try to be in line with current fashions that might fade or end in not being "cool" anymore (*The Times*, August 7, 2008, "Suddenly being green is not cool any more"). From this perspective, people are inactive or inconsistent in what they say and what they do because they don't know how to "buy into" a green lifestyle. As a consequence, government would need to make it easier and cheaper for people to cut emissions rather

than imposing regulations and additional taxes that would affect people's economic capacity to consume.

Unlike *The Times* and *The Telegraph*, *The Guardian's* selection of poll questions did not suggest disingenuous public concern or hypocrisy as explanations for inaction. Moreover, the gap was not located between words and action but between a relatively high willingness to do small steps and a much lower willingness to radically change lifestyles and to give up high-carbon "luxuries" such as flying and driving (July 3, 2007, article 35; February 22, 2006, article 22). Consequently, government would need to find "new ways to sell low-carbon lifestyles to the public" and focus regulatory efforts on these areas of high-carbon luxuries.

With its headline "Flying in the face of our principles" (November 25, 2007), *The Daily Mail* took on the concern-action gap from a different angle. The article challenged that "there is widespread unwillingness to make wholesale changes to our holidays to combat climate change." Instead, it was suggested that people who continue to fly do not reject the "green message," but do so because flying has become "a basic and nonnegotiable part of many of our lives." Interestingly, this claim stood in sharp contrast to the notion of flying as a dispensable "luxury" as put forward in *The Guardian* (article 35). The widespread public opposition to new air taxes to meet government's emission reduction targets should thus be taken as a rejection of constraints to people's lives and individual freedom. Consequently, government should abstain from such measures and make, instead, alternatives more attractive to consumers.

Referring to a poll commissioned by the Energy Saving Trust, *The Independent* ran "The green gap between concern and action" (April 2, 2007). Accordingly, the article reported that "around 80% of the public believe that climate change is a major problem" but "only 60% of those questioned are actually doing something to reduce their personal energy use." Only a third thinks environmentally friendly measures, such as green taxes, road pricing, and carbon rationing, are "socially acceptable." People's concern-action inconsistency was presented as a repercussion of government's consistently weak leadership. The article singled out central government as the leading actor that should steer markets and people's behavior. One day later, (April 3, 2007), another article titled "We all care about the environment—but not enough to do anything" used the findings to specify why the government should lead and the public should follow. Accordingly, it would be unwise to ascribe a leading role to the public because

. . . even when it comes to ecological lip service, the picture is confused. In February, one poll on public attitudes towards climate change reported that 63% of respondents were in favor of green taxes to curb carbon emissions, but the Energy Saving Trust report on public attitudes to climate change suggested that it is far easier for us to murmur generalities about global warming than to take even modest steps.

By portraying public responses to polls as confused, contradictory, and hence, unreliable, the article disqualified them as a guide for decision makers. Alongside, public opinion was presented as

something amenable that would allow for and require clear government leadership.

Problematically, the article failed to acknowledge that the width of concern-action gaps is extremely sensitive to temporal discrepancies in collecting data on attitudes and behaviors as well as to the level of question specificity (Ajzen, 1987; Ajzen & Fishbein, 1977; Kollmuss & Agyeman, 2002). Especially if major influential events occur between the assessment of attitudes and behavior, as in this case, the IPCC AR4, wide concern-action gaps are typical methodological artifacts. Similarly, without disclosing any information on specific poll questions, it is not clear as to what extent concern-action gaps are real inner-individual inconsistencies or results from different scopes of concern-related and behavior-related questions. For example, the question on general concern about climate change is much broader in scope than questions on energy use, driving behavior, or the acceptance of specific political measures, which automatically results in large gaps (e.g., Newhouse, 1991). However, by drawing attention to allegedly dramatic inconsistencies, the article made a strong case for governmental regulation ahead of public approval.

Discussion

This article has started to probe how public opinion polls have been employed in the struggle over anthropogenic climate change and related societal responses in the UK press.

The few articles published around 1990 have focused on the public's factual knowledge and the acceptance of nuclear energy as a trajectory to mitigating global warming. The first theme clearly resonates with the paradigm of "scientific literacy" (Bauer, Allurn & Miller, 2007; Hisschemöller & Midden, 1999) that had dominated public opinion research until the 1990s (Bauer et al., 2007). The latter can be regarded as a reflection of the UK wide controversy that followed Margaret Thatcher's "appropriation of the risks of climate change to promote nuclear energy" at that time (Carvalho, 2007, p. 228).

It was not before 2005 and the general boost in coverage (Boykoff, 2007, 2008) that papers substantially increased the number of headlines on climate change-related opinion polls. In 2007, the year of the IPCC AR4, newspapers most prominently featured public opinions on the presence of anthropogenic climate change and related individual, political, and economic responses. Indeed, only as the debate over the reality of and domestic responses to climate change grew in profile and immediacy, did newspapers start to give more room for direct accounts of public opinion.

The pattern of sporadic and irregular coverage, with clear periods of attention and silences, indicates that the newspapers' use of opinion polls has been strategic rather than mirroring attempts to provide a regular platform for public expression. For instance, with a self-commissioned poll showing high public concern, *The Guardian* built up pressure on government to start acting in 2005. In 2007, newspapers drew on public opinion to confirm or challenge that the public debate was closed with the IPCC consensus. In the same year, newspapers increasingly reported on polls conducted on their behalf to

reject or argue for new regulations and green taxes that loomed with the UK Climate Change Programme 2006 and the Climate Change Bill 2007. In 2008, *The Observer* and *The Guardian* presented polls in a way that would help to sustain political commitment in times of economic crisis.

Public Opinion in the Struggle Over the Presence of Anthropogenic Climate Change

The comparison of synchronic coverage of one opinion poll in 2007 has demonstrated how public views have been employed in a normative struggle over anthropogenic climate change. Newspapers have (ir)rationalized and politically (dis)empowered skepticism to confirm or to challenge that, with the IPCC scientific consensus, the debate on the reality and relevance of climate change was closed. While they could have chosen a story on a majority of people accepting human effects on the climate, newspapers emphasized public skepticism and attached favored meaning to it. The differences in reportage highlight that "ideological cultures" are not only "key to explain variations in the media's reinterpretation of scientific knowledge" (Carvalho & Burgess, 2005, p. 1467) but also help to understand representations of public views on climate change.

The Guardian, emphasizing scientific consensus (Carvalho, 2007), presented a story of a misled public irrationally doubting the IPCC consensus. In this way, alleged public skepticism was put in a position from which it could hardly challenge the closure of the debate, but could serve to criticize climate change deniers. *The Telegraph*, having made room for articles dismissing the IPCC consensus, emphasized that while people accept that climate change is a problem, public reasoning and debate takes place in a broader sociopolitical context in which scientific certainty is but one consideration. In this way, poll results were not used to make the case for delegitimizing IPCC critiques but to channel the debate to the question of the actual sociopolitical meaning and priority of climate change, thereby inviting continued debate and controversy. *The Daily Mail* rendered skepticism as rational and legitimate by de-emphasizing the authority of science and by positioning the public as a powerful player in a completely politicized debate. Through magnifying the image of disagreement between voters' opinions, scientists and politicians, the article suggested that the debate on anthropogenic climate change as remaining wide open and decision makers' room to maneuver as being limited. Indeed, this presentation corresponds with Boykoff and Mansfield's (2008) finding that while UK broadsheets started to report in accordance to the scientific consensus from 2005, UK tabloids' coverage continued to disseminate controversy and uncertainty. Moreover, the finding suggests that the voice of the public has been brought into play to sustain nonclosure and controversy in times of scientific consensus.

Strikingly, the reporting on public views has resembled long-standing struggles between protagonists and "skeptics" or "deniers" of anthropogenic climate change. In fact, selected poll questions have largely echoed and replicated the language produced in the spheres of science, environmentalism, and environmental skepticism. This language primarily serves to endorse or to "dismiss the reality of climate change" through narratives of valid, controversial, and uncertain science; ambiguous causes or effects; and the seriousness, urgency, and priority of the problem (Antilla, 2005; McCright & Dunlap, 2000; Grundmann, 2007; Jacques, Dunlap & Freeman, 2008; Nisbet, 2009). Poll statements such as

"many experts still question if humans are contributing to climate change," and "too much fuss is made about climate change nowadays," words like *overstated* and *denial*, as well as questions aiming at prioritizing issues and resources are typical of such debates. By adopting this language, experts' beliefs have been translated as commitments of the "lay" public and hence portrayed as contention among citizens. The genuineness of such contention and the validity of headlines have often remained unproven as this article has shown. At the same time, poor disclosure of basic poll information has made it difficult to uncover flaws.

Public Opinion in the Struggle over the Responses to Anthropogenic Climate Change

Public opinion polls have furthermore become a device in the struggle over responses to climate change. Diachronic analysis of main stories has shown that newspapers set, mainstreamed, and used different normative baselines for "good" behavior change by interpreting poll results accordingly. These baselines can, as demonstrated for *The Guardian*, evolve over time, triggered by events and changing conditions. After the IPCC AR4 had highlighted radical lifestyle change to mitigate climate change, *The Guardian* and *The Observer* abandoned the "small steps" paradigm in favor of lifestyle changes, which is also reflected in the commission of polls shading these differences. Other papers did not emphasize such a qualitative distinction between small and radical changes. Even in 2008, *The Daily Mail* and *The Times* focused their poll reporting on plastic bags, an emphasis that has been condemned in *The Guardian* as undermining the seriousness of climate change and distracting from real changes and fundamental political efforts.

Furthermore, newspapers have advanced different readings of gaps or inconsistencies in public responses to explain and legitimize (in)action and to mark decision makers' room for maneuvering. Through rendering public words and actions as inauthentic and minority-induced fashion, *The Times* and *The Telegraph* have diminished the political pressure for fundamental change and regulatory intervention. Rather, government should focus on supporting people's financial capacities to consume green lifestyles and thereby on sustaining the social and economic status quo. The embedded political content corresponds with Carvalho's (2007) finding on *The Times'* aversion to political regulation and suggests that opinion polls have been employed to substantialize this stance. *The Guardian* has stressed the gap between the public's willingness to do small steps on one hand and people's relative reluctance to radically change their lifestyle on the other, thereby recommending the latter as an area for more political intervention and public education. *The Daily Mail* has read the gap between a high concern and actual behavior as public demand to not intervene in people's lives by legally forcing changes that would constrain their freedom. Governmental action should instead widen the range of alternatives for individual choice. In *The Independent*, dramatic inconsistencies in public responses have been presented as evidence for widespread confusion and hence the unreliability and amendability of public opinion. This image has helped to underscore claims for firm government leadership taking even unpopular measures. The call for stronger political intervention in *The Independent* and *The Guardian* again corresponds with Carvalho's findings (2007). Ultimately, what reveals itself in these readings of polls is an underlying struggle over the prevalence of particular values, norms, and principles guiding individuals and societies (Rose, 2000). In this struggle, the representation of polls appears to be one way for newspapers to gain definitional

authority over the social acceptability of and foundation for individual and governmental action.

While newspapers have put much emphasis on explaining public responses via such gaps, they have largely failed to make transparent that they are usually a mix of reality and methodological artifacts. Even more questionable, though, gaps have been widened by linguistic means and data selection. Certainly, the focus on such gaps also results from the current dominance of market research institutes as producers and validators of public opinion in the UK press. With their conceptional focus, they specialize in delivering various explanations for gaps between people's knowledge, attitudes, and behavior to which a range of political meaning can be attached. While such research on the manifold reasons for gaps is vital for a deeper understanding of engagement (e.g., APA, 2009), it is problematically oversimplified in press representations ascribing gaps to either a lack of genuine concern and willingness or to the prevalence of norms of personal freedom and consumption.

Apart from ideological stances and conceptional foci of market research institutes, newsworthiness and dramatization as intersecting journalistic norms (Boykoff & Boykoff, 2007; Smith, 2005) have shaped the selection of poll results and the linguistic means for their interpretation. For example, in the year of the IPCC AR4, stories about a public doubting anthropogenic climate change were arguably highly newsworthy, guaranteeing wide attention for embedded claims. Dramatized accounts of public stances and attitude-behavior gaps can indeed be regarded as journalistic workaday means to generate newsworthy stories and to justify the detailed reportage of opinion polls. In its general demand for fresh and novel accounts, the "repetition taboo" (Gans, 1979) has certainly stimulated crisis-inducing interpretations of public sentiment rather than balanced, regular, and nuanced presentations of people's views and behaviors.

Representations of the Public in Press Accounts of Opinion Polls on Climate Change

These aforementioned factors have certainly shaped and constrained the public's room for expression through opinion polls and their media presentation. The delimited room has allowed the public to live up to or to fail imposed expectations of "good" behavior, to be right or wrong in the light of normative assumptions, and to accept or refuse what other actors had proposed. This finding corroborates Lewis et al. (2004), who showed that in the UK press the public has been presented as a maneuverable object in discourses rather than as active and formative subjects.

Finally, the focus on judging public responses against yardsticks set by others has naturally translated into an emphasis on public deficits. Indeed, although widely condemned as inadequate in scientific literature (Bauer et al., 2007; Irwin, 1995; Stilgoe, 2007; Wynne, 2005), such authoritarian and tendentiously discrediting accounts of public views appear to have lived on and flourished in UK newspapers. While, in early years, coverage has focused on shortcomings in factual knowledge, public deficit models appear to have diversified alongside the themes of public opinion polls on climate change. Accordingly, the public has been portrayed as deficient in terms of rationality, reliability, authenticity, consistency, acceptance, and behavior. For example, declaring public responses as irrational in the light of

scientific facts and as gullible to manipulation replicates a specific public deficit model for mistrust in or ignorance of science (Wynne, 2005). In ideological struggles, though, reading public responses as various kinds of deficiencies is well-suited to legitimize or challenge the leadership of specific actors and to build up justifications for favored measures and areas of (in)action. At the same time, such public divergence lacks formative agency and is thus easy to maneuver by its authors.

Conclusions

Media are key mediators of communication among science, the public, and the political spheres on collective challenges such as climate change (Beck, 1992). This work suggests that the way UK newspapers have fulfilled this role is limited and problematic. Press coverage on the public's views on climate change appears to be largely locked in normative struggles in which extreme pictures of public stances and its deficits are employed as argumentative devices to endorse and challenge claims and courses of (in)action.

These containing conditions certainly diminish the value of the recent (and in principle), laudable increase in opinion poll reporting and might even do a disservice to collective climate change action. Indeed, it is doubtful that polarizing and crisis-inducing presentations in the UK press promote new links between citizens and other actors that are based on mutual respect and appreciation. While often of questionable validity, images of a denying, unreliable, easily manipulated, apathetic and dishonest public might furthermore compromise moves to deeper and wider public engagement in at least two ways. First, such representations of the public feed back into the public's version of itself and serve to rationalize and validate people's own views and actions (Michael, 1998; Rose, 1996). It appears unlikely that conveyed images of a widely denying, apathetic, and hypocritical public encourage action and mutual understanding between members of the public. Rather, such images polarize between readerships and indirectly devalue concerns and those trying to act in some way. Second, these images undermine calls to empower citizens as capable and active subjects in agenda setting and decision making. Advocates maintain that such empowerment is pivotal for strengthening collective responsibility, for opening up entrenched ways of thinking about possible pathways, and for the social acceptance of decisions (e.g., Bell, Gray & Haggett, 2005; Irwin, 1995; Owens, 2000; Wilsdon & Willis, 2004; Wolsink, 2007). However, such rationales for public engagement fundamentally base and rely on a broader concept of the public that encompasses agency, competence, achievement, and opportunity (Gabrielson, 2008). The current focus on public deficits and reactivity in UK newspapers primarily rationalizes top-down public instruction and potentially deteriorates the foundations for inclusive and substantial public engagement.

If the aim is to provide a fact-based platform for public opinion, journalists and all authors involved in the production and media representation of opinion polls should adopt a more critical and careful approach. At the very least, they should acknowledge conditions and limitations of their assessments and lay open available counterevidence. However, newspapers might go further and actually facilitate public involvement by embracing and displaying the complexity of public perceptions and human engagement (Lorenzoni, Pidgeon, & O'Connor, 2005; Pattie, Seyd, & Whiteley, 2003). For this to happen,

a broader approach to public opinion assessment that develops poll questions through communicative interaction with people is needed to resemble their language, to access genuine topics and to grasp forms of and barriers to people's engagement. In this way, created surveys could contribute to opening up debate rather than merely reproducing predominant discourse and proposed meanings. Media presentations might benefit from a closer cooperation with the evolving scientific domain that aims to broaden our understanding of public engagement with climate change through combining qualitative and quantitative evidence and by taking longitudinal perspectives on data.

The conclusions drawn are limited to the two themes analyzed, and it remains open to interrogation whether they can be extended to other themes. It is hoped that this article stimulates further research, particularly on how newspaper accounts of polls further diffuse in the media system and how opinion polls are reported in other mass communication outlets. Similar studies could be conducted in other countries to try to relate results to levels of political polarization on the issue. To more closely examine and critically reflect upon the processes and decisions that underlie the production and dissemination of public opinion on climate change is one of the important challenges for future communication research.

References

- Ajzen, I. (1987). Attitudes, traits and actions: Dispositional prediction of behavior in personality and social psychology. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 20, pp. 1–63). New York: Academic Press.
- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, *84*, 888–918.
- Andersen, R. (2000). Reporting public opinion polls: The media and the 1997 Canadian election. *International Journal of Public Opinion Research*, *12*, 285–298.
- Antilla, L. (2005). Climate of scepticism: US newspaper coverage of the science of climate change. *Global Environmental Change* *15*, 338–352.
- APA. (2009). Psychology and global climate change: Addressing a multi-faceted phenomenon and set of challenges. Report of the American Psychological Association. Retrieved October 11, 2009, from: <http://www.apa.org/science/climate-change>
- Bauer, M. W., Allurn, N., & Miller, S. (2007). What can we learn from 25 years of PUS survey research? Liberating and expanding the agenda. *Public Understanding of Science*, *16*, 79–95.
- Beck, U. (1992). *Risk Society: Towards a New Modernity*. London, SAGE.
- Bell, D., Gray, T., & Haggett, C. (2005). The social gap in wind farm siting decisions: Explanations and policy responses. *Environmental Politics*, *14*, 460–477.
- Bord, R. J., Fisher, A., & O'Connor, R. (1998). Public perceptions of global warming: United States and international perspectives. *Climate Research*, *11*, 75–84.
- Boykoff, M. T. (2007). Flogging a dead norm? Newspaper coverage of anthropogenic climate change in the United States and United Kingdom from 2003 to 2006. *Area*, *39*(4), 470–481.
- Boykoff, M. T. (2008). The cultural politics of climate change discourse in UK tabloids. *Political Geography*, *27*, 549–569.

- Boykoff, M. T., & Boykoff, J. M. (2007). Climate change and journalistic norms: A case-study of US mass-media coverage. *Geoforum, 38*, 1190–1204.
- Boykoff, M. T., & Mansfield, M. (2008). Ye Olde Hot Aire*: Reporting on human contributions to climate change in the UK tabloid press. *Environmental Research Letters, 3*, 1–8.
- Carvalho, A. (2007). Ideological cultures and media discourses on scientific knowledge: Re-reading news on climate change. *Public Understanding of Science, 16*, 223–243.
- Carvalho, A. (2008). Media(ted) discourse and society. *Journalism Studies, 9*, 161–177.
- Carvalho, A., & Burgess, J. (2005). Cultural Circuits of Climate Change in U.K. Broadsheet Newspapers, 1985–2003. *Risk Analysis, 25*, 1457–1469.
- De Vreese, C. H., & Semetko, H. A. (2002). Public perception of polls and support for restrictions of the publication of polls: Denmark's 2000 Euro referendum. *International Journal of Public Opinion Research, 14*, 367–390.
- Doulton, H., & Brown, K. (2009). Ten years to prevent catastrophe? Discourses of climate change and international development in the UK press. *Global Environmental Change, 19*, 191–202.
- Downing, P., & Ballantyne, J. (2007). Tipping point or turning point? Ipsos MORI. Retrieved April 4, 2009, from http://www.ipsos-mori.com/_assets/reports/turning-point-or-tipping-point.pdf
- Edelman, M. (1971). *Politics as symbolic action: Mass arousal and quiescence*. New York: Academic Press.
- Edelman, M. (1993). Contestable categories and public opinion. *Political Communication, 10*, 231–242.
- Entman, R. M., & Herbst, S. (2000). Reframing public opinion as we know it. In W. L. Bennett & R. M. Entman (Eds.), *Mediated politics: Communication in the future of democracy* (pp. 203–225). Cambridge: Cambridge University Press.
- Entman, R. M. (2004). *Projections of power: Framing news, public opinion, and U.S. foreign policy*. Chicago: The University of Chicago Press.
- Gabrielson, T. (2008). Green citizenship: A review and critique. *Citizenship Studies, 12*, 429–446.

Gans, H. (1979). *Deciding what's news*. New York: Pantheon.

Gollin, A. E. (1980). Exploring the liaison between polling and the press. *The Public Opinion Quarterly*, 44, 445–461.

Grundmann, R. (2007). Climate change and knowledge politics. *Environmental Politics*, 16, 414–432.

Hardmeier, S. (1999). Political poll reporting in Swiss print media: Analysis and suggestions for quality improvement. *International Journal of Public Opinion Research*, 11, 257–274.

Hisschemöller, M., & Midden, C. J. H. (1999). Improving the usability of research in the public perception of science and technology for policy-making. *Public Understanding of Science*, 8, 17–33.

Irwin, A. (1995). *Citizen science: A study of people, expertise and sustainable development*. Abingdon, UK: Routledge.

IPCC. (2007). Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Summary for Policymakers. Retrieved August 10, 2009, from <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-spm.pdf>

Jacques, P. J., Dunlap, R. E., & Freeman, M. (2008). The organisation of denial: Conservative think tanks and environmental scepticism. *Environmental Politics*, 17, 349–385.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8, 239–260.

Lester, L., & Cottle, S. (2009). Visualizing climate change: Television news and ecological citizenship. *International Journal of Communication*, 3, 920–936.

Lewis, J., Wahl-Jorgensen, K., & Inthorn, S. (2004). Images of citizenship on television news: Constructing a passive public. *Journalism Studies*, 5, 153–164.

Lipari, L. (2000). Toward a discourse approach to polling. *Discourse Studies*, 2, 187–215.

Lippmann, W. (1997). *Public opinion*. New York: The Free Press. (Original work published 1922)

- Lorenzoni, I., Pidgeon, N., & O'Connor, E. (2005). Dangerous climate change: The role for risk research. *Risk Analysis, 25*, 1387–1398.
- Lorenzoni, I., Leiserowitz, A., De Franca Doria, M., Poortinga, W., & Pidgeon, N. F. (2006). Cross-national comparisons of image associations with global warming and climate change" among laypeople in the United States of America and Great Britain. *Journal of Risk Research, 9*, 265–281.
- Lorenzoni, I., & Pidgeon, N. F. (2006). Public views on climate change: European and USA perspectives. *Climatic Change, 77*, 73–95.
- Manza, J., Cook, F. C., & Page, B. I. (2002). Navigating public opinion: polls, policy, and the future of American democracy. New York: Oxford University Press USA.
- McCright, A. M., & Dunlap, R. E. (2000). Challenging global warming as a social problem: An analysis of the conservative movement's counter-claims. *Social Problems, 47*, 499–522.
- Michael, M. (1998). Between citizen and consumer: Multiplying the meanings of the public understanding of science. *Public Understanding of Science, 7*, 313–327.
- Newhouse, N. (1991). Implications of attitude and behavior research for environmental observation. *The Journal of Environmental Education, 22*, 26–32.
- Nisbet, M. C. (2009). Communicating climate change: Why frames matter for public engagement. *Environment, March-April*, 1–15.
- Nisbet, M. C., & Myers, T. (2007). The polls trends: Twenty years of public opinion about global warming. *Public Opinion Quarterly, 71*, 444–470.
- Owens, S. (2000). Engaging the public: Information and deliberation in environmental policy. *Environment and Planning A, 32*, 1141–1148.
- Paletz, D. L., & Entman, Robert M. (1981). Media, power, politics. New York: The Free Press.
- Pattie, C., Seyd, P., & Whiteley, P. (2003). Citizenship and civic engagement: Attitudes and behaviour in Britain. *Political Studies, 51*, 443–468.

- Rose, N. (1996). *Inventing our selves: Psychology, power, and personhood* Cambridge University Press.
- Rose, N. (2000). Community, citizenship, and the third way. *American Behavioral Scientist*, 43, 1395–1411.
- Sampei, Y., & Aoyagi-Usui, M. (2009). Mass-media coverage, its influence on public awareness of climate-change issues, and implications for Japan's national campaign to reduce greenhouse gas emissions. *Global Environmental Change*, 19, 203–212.
- Smith, J. (2005). Dangerous news: Media decision making about climate change risk. *Risk Analysis*, 25, 1471–1482.
- Stilgoe, Jack. (2007). The (co-)production of public uncertainty: UK scientific advice on mobile phone health risks. *Public Understanding of Science* 16, 45–61.
- Suhonen, P. (1997). The media, polls and political process: The case of Finland. *European Journal of Communication*, 12, 219–238.
- Wilsdon, J., & Willis, R. (2004). *See-through science: Why public engagement needs to move upstream*. London: Demos. Retrieved May 2, 2009, from <http://www.demos.co.uk/files/Seethroughsciencefinal.pdf>
- Wilson, K. (1995). Mass media as sources of global warming knowledge. *Mass Communication Review*, 22, 75–89.
- Wolsink, M. (2007). Planning of renewable schemes: Deliberative and fair decision-making on landscape issues instead of reproachful accusations of non-cooperation. *Energy Policy*, 35, 2692–2704.
- Wynne, B. (2005). Public engagement as a means of restoring public trust in science: Hitting the notes, but missing the music? *Community Genetics*, 9, 211–220.