

# Representation of climate change consequences in British newspapers

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[journals.sagepub.com/home/ejc](https://journals.sagepub.com/home/ejc)**Maria Laura Ruiu** 

Northumbria University, UK

## Abstract

This article explores British newspaper descriptions of the impact of climate change across three time periods. It shows a reduction in representing the consequences of climate change as ‘out of human control’. It also shows a decrease in adopting alarming and uncertain descriptions within the centre-left group, whereas mocking the effects of climate change is a peculiarity of right-leaning narratives. The complexity of climate narratives produces a variety of representations of the consequences of climate change, which in turn might increase ‘uncertainty’ in public understanding of climate change.

## Keywords

Climate change, climate change consequences, global warming, media reporting

## Introduction

Previous findings highlighted that the public perceives a generalised alarmism spread by media messages around climate change in the United Kingdom (Whitmarsh, 2011), which in turn is counterproductive for individual engagement (O’Neill and Nicholson-Cole, 2009). While the literature focuses on public reaction to specific media messages, limited efforts have been devoted to exploring the variety of representations of the effects of climate change by British newspapers. The media are immersed in specific political systems, which in turn have an influence on the media model. This becomes relevant when considering that 60% of national newspaper circulation in the United Kingdom is controlled by two companies (Rupert Murdoch’s News Corp UK and Lord Rothermere’s Daily Mail Group). The percentage increases to 71% when Trinity Mirror is included

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### Corresponding author:

Maria Laura Ruiu, Faculty of Art Design and Social Science, Northumbria University, Lipman Building, Newcastle-upon-Tyne NE1 8SB, UK.

Emails: [marialauraruiu@gmail.com](mailto:marialauraruiu@gmail.com); [maria.l.ruiu@northumbria.ac.uk](mailto:maria.l.ruiu@northumbria.ac.uk)

(Media Reform Coalition, 2015). Hallin and Mancini (2004) argue that the British press 'has always mirrored the divisions of party politics' (p. 208), especially in news content (see also Curtice, 1999). This partisan division is particularly evident when considering the representation of the consequences of climate change by newspapers. In fact, some studies showed that reference to the catastrophic effects of climate change is a peculiarity of left-leaning UK newspapers (Carvalho, 2005, 2007), whereas mockery is characteristic of the right-wing (Ereaut and Segnit, 2006).

Describing climate change in certain ways has implications, not only in terms of making the issue salient, but also for the public understanding of science. This is important because a coherent representation of the effects of climate change that is based on action-oriented messages might contribute towards increasing public engagement (Hart and Feldman, 2016). In contrast, framing such consequences as disputable, out of human control and uncertain might increase confusion. Hence, this article extends research on the framing of climate change by investigating news articles retrieved from eight British newspapers in three time periods (from 1988 to 2016). The focus on the British context reflects the key role played by Britain in the international politics of climate change and the fact that its news articles are reproduced by English-speaking print media around the world (Painter and Gavin, 2016).

The first section reviews the literature on the representation of consequences in climate change narratives. The second section and its related sub-section describe the methods used for both analysing and extracting a sample of articles. The third section reports the results of a regression analysis aimed at exploring different descriptions of the consequences of climate change. Finally, considerations and conclusions suggest some implications of this study.

## **Literature review**

The literature on media reporting on climate change frequently refers to the representation of conflicts within the scientific community (McKnight, 2010; Painter and Ashe, 2012; Painter and Gavin, 2016) despite the almost unanimous consensus about the severe consequences of climate change and its anthropogenic causes (Boykoff, 2013; Capstick and Pidgeon, 2014; Freudenburg and Muselli, 2010; Hobson and Niemeyer, 2013; Rahmstorf, 2012). Several studies focused on how the media frame climate change (Boykoff, 2013; Ivanova et al., 2013; Malhotra, 2015) and identify a tendency to distort scientific results (Tosse, 2013; Vestergard, 2011) and provide misleading information (Ahchong and Dodds, 2012; Jennings and Hulme, 2010). Framing is used to describe the way a message is constructed and organised to make certain aspects salient (Gamson and Modigliani, 1989). Framing concerns the 'interpretive schemas' that drive the understanding of a given phenomenon (Scheufele and Tewksbury, 2007). Following this definition, climate change has been framed in different ways in relation to a multiplicity of factors. Shanahan (2007) refers to six frames targeted at audiences, which might engage specific segments of the public, but disengage some others. In a similar attempt to classify the variety of frames adopted by the media to define science-related issues, Nisbet (2009) identified eight additional frames. However, one of the main recurrent findings is the adoption of 'conflict frames' to represent scientific knowledge (McKnight, 2010; Olausson, 2010;

Painter and Ashe, 2012; Painter and Gavin, 2016). Three main controversial aspects (Painter, 2011; Painter and Gavin, 2016; Rahmstorf, 2004) are related to (a) the existence, (b) the anthropogenic causes and (c) the impact of climate change. Specifically, some forms of scepticism, such as in the case of ‘impact sceptics’, recognise the anthropogenic causation of climate change, but claim that the impact may be positive, far in the future or unknown (Painter and Ashe, 2012; Painter and Gavin, 2016). However, many studies have focused on either exploring media reporting on the existence and anthropogenic contribution to climate change, or on media effects on public opinion. Only limited efforts have been devoted to investigating the representation of consequences (Murphy, 2015; Painter and Gavin, 2016; Pasquaré and Oppizzi, 2012; Weathers and Kendall, 2016). In fact, even when exploring the effects of media messages on public engagement, the literature emphasises the negative effects of representing climate change as uncontrollable, while marginalising other strategies such as in the case of ‘mocking’ climate change (Carvalho, 2007; Carvalho and Burgess, 2005; Ereaut and Segnit, 2006).

However, a number of studies found that media reporting has shifted towards scientific consensus (Boykoff, 2007; Boykoff and Boykoff, 2004; Gibson et al., 2015; Grundmann and Scott, 2014; Jang and Hart, 2015), especially in UK newspapers (Ruiu, 2020; Grundmann and Krishnamurthy, 2010; Matthews, 2015; Nerlich et al., 2012). Despite an increasing recognition of the existence of climate change, some elements of the media coverage were found to enhance feelings of uncertainty around scientific evidence and the action needed (Leiserowitz, 2006; Von Burg, 2012). These elements were mainly identified through the adoption of a ‘Pandora’s Box’ narrative style (Nisbet, 2009), which is based on fatalism (Kumpu, 2013). Therefore, the literature highlights that those forms of sensationalism oriented to catastrophe-narrative styles negatively influence public engagement (Howell, 2011; Jacobsen, 2011; Milburn and McGrail, 1992; Nerlich and Jaspal, 2014; Sakellari, 2014; Salvador and Norton, 2011) by both affecting the credibility of science (Klemm et al., 2016; Von Burg, 2012) and producing ‘apathy’ (Greitemeyer, 2013; Wibeck, 2014).

The aforementioned findings suggest that climate change narratives have increasingly embraced scientific consensus. Moreover, the narratives of ‘catastrophe’ have been found to be ‘unscientific’ (Hulme, 2009; Taylor and Nathan, 2002) or at least counterproductive if alternatives are not provided. This suggests that the increasing integration of scientific consensus in climate reporting should coincide with a decrease in representing climate change as ‘uncontrollable’, because science tends to avoid a ‘language of catastrophe’ (Hulme, 2006). In contrast, scientific language is more likely to be ‘alarming’ (Risbey, 2008), which means that, despite describing climate change as severe/catastrophic, human intervention can still contain the negative effects (Risbey, 2008). In line with these findings, the first hypothesis assumes the following:

*Hypothesis 1.* The representation of the consequences of climate change as ‘out of human control’ has decreased across the three blocs of years compared to the representation of climate change as ‘controllable’.

Moreover, a consistent body of research has shown that sceptical orientations (Connor and Higginbotham, 2013; Ereaut and Segnit, 2006; Whitmarsh, 2011) are often

connected to the perception of reporting as ‘exaggerated’ (Poortinga et al., 2011; Tranter and Booth, 2015). Previous literature highlights that the ‘speculation about worst-case scenarios’, without mentioning how to solve the problem, produces feelings of uncertainty (Ereaut and Segnit, 2006) and ‘panic’ (Chang, 2012). In contrast, positive news may enhance people’s engagement and action (Berry et al., 2007). Therefore, following these lines of interpretation, the increase in scientific knowledge should coincide not only with a decrease in describing ‘uncontrollable’ scenarios, but also with a decrease in reporting uncertainty around the consequences of climate change. However, the emphasis on the risks and negative connotations of the effects of climate change has mainly been attributed to left-leaning orientations (Carvalho, 2007; Carvalho and Burgess, 2005; Ereaut and Segnit, 2006). This suggests that the decrease in representing climate change as ‘out of human control’ in left-leaning narratives may also depend on a shift towards representing the effects of climate change as either ‘controllable’ (through intervention) or without specific connotations (in terms of their positive or negative impacts). For this reason, the second research hypothesis is split into three sub-hypotheses:

*Hypothesis 2a.* The centre-left coverage has increasingly represented the consequences of climate change as alarming but controllable.

*Hypothesis 2b.* The centre-left coverage has increasingly adopted neutrality to describe the consequences of climate change (no connotations, either positive or negative).

*Hypothesis 2c.* The centre-left coverage has decreasingly represented uncertainty around the consequences of climate change.

The literature highlights that the media ‘negotiate’ the meaning of climate change with interest groups when framing the problem (Lück et al., 2018). This has been connected to their dependency upon external financial support that might influence their content (Edwards and Cromwell, 2006). This suggests that the use of ‘mockery’ might result from sceptics’ attempts to diminish climate science credibility. In fact, the use of mockery has been recognised to ‘trivialise’ alarmism and promote scepticism (Carvalho, 2005, 2007; Ereaut and Segnit, 2006; Von Burg, 2012), and this has been mainly attributed to conservative orientations (Buell, 2003; Von Burg, 2012).

Therefore, the third hypothesis assumes the following:

*Hypothesis 3.* The centre-right-leaning coverage has increasingly mocked the consequences of climate change across the three time blocs.

## Sample criteria

A sample of 958 news articles (including both news and editorials) was retrieved from eight British newspapers and their Sunday and online versions. The political orientation of the newspapers was established according to a YouGov survey (2017) on people’s perception of the political orientation of newspapers in the United Kingdom. The newspapers included in the centre-right group were *The Daily Mail*, *The Daily Express*, *The Sun*, *The*

**Table 1.** Sample of articles per bloc of years and political orientation.

Years	N articles retrieved from Lexis/Nexis	Sample centre-right	Sample centre-left
1988–1997	396	36	161
1998–2007	1933	88	301
2008–2016	7460	112	260
Total	9789	236	722

*Times* and *The Daily Telegraph*. Those included in the centre-left were *The Guardian*, *The Daily Mirror* and *The Independent*. The Nexis/Lexis database was used to retrieve the news articles using the following keywords: ‘climate change’, ‘global warming’ and ‘greenhouse effect’ (Carvalho, 2007). Only those articles containing keywords-related terms (‘climate/climatic’, ‘warm/warming’ and ‘greenhouse/greenhouse effect’) in the headline were included in the analysis. These articles were grouped into three blocs (1988–1997, 1998–2007, 2008–2016). This choice was an appropriate compromise to analyse a reasonable number of articles that could be representative of each bloc-population. Once the letters and duplicates were removed, 9789 items were initially retrieved and grouped into three blocs of 10 years. The first bloc starts with the Intergovernmental Panel on Climate Change (IPCC) institution and the emergence of the climate change issue in public debate and ends with the definition of the Kyoto Protocol. Since the protocol was signed by the end of the year (December 1997), 1998 was considered the starting point of the second bloc. This is an historical moment for climate change discourse because for the first time the Kyoto Protocol established binding targets for reduction of greenhouse gases (Carvalho, 2007). Finally, following Doulton and Brown (2009), by 2006/2007 optimism (used to mean ‘Climate change will be beneficial’) disappears from the more conservative UK newspapers (replaced by potential catastrophe discourses) and crisis discourses (‘disaster strikes’) dominate the progressive papers.

The final sample was generated as a NItems/NSample and chronologically extracted (Boykoff and Boykoff, 2004). ‘NItems’ corresponds to the number of articles retrieved from Lexis/Nexis per each bloc, and ‘NSample’ to the number of articles needed to provide a sample that is representative of each bloc with 95% confidence level and 5% margin error. Therefore, the sample was generated by including every second item of the 1988–1997 group, every fifth of the 1998–2007 group and every 20th of the 2008–2016 group. This made it possible to respect both the difference in the number of articles over the three blocs (sample larger in years with higher news coverage) and the real disproportion between the number of articles published by left-leaning and right-leaning newspapers (see Table 1).

## Methods

A framing analysis of a sample of 958 news articles from 1988 to 2016 retrieved from eight British newspapers was conducted by including both tabloids and broadsheets, which are the most sold formats in the United Kingdom (BBC, 2020). Tabloids are usually identified

as ‘popular’ press, whereas broadsheet are seen as ‘quality’ newspapers (usually characterised by more in-depth analysis; BBC, 2020). However, as argued by Boykoff and Mansfield (2008), the analysis of connections between media representations and environmental communications should consider that large segments of the population read tabloids.

The decision to split the sample into two macro-groups and label them as ‘centre-right’ and ‘centre-left’ derives from a difficulty, documented in the literature, in attributing a specific and undisputable political orientation to newspapers (Edwards and Cromwell, 2006). The newspapers were selected in relation to their presence on the market throughout the period. Therefore, the number of newspapers that belong to the centre-left and centre-right, as well as the number of articles, is unequal because it reflects the real picture of the entire period. The frame was conceived as a ‘cluster of frames elements’ (Matthes and Kohring, 2008) by identifying internal sub-categories. The conceptualisation of this frame as a multilevel cluster also depends upon a previous study conducted by the Author (2020). This study highlighted the need for further exploration of the consequences of climate change beyond the mere scientific consensus. In fact, it showed no significant changes in reporting the existence of consequences over time, but identified a need to explore the multidimensional representation of climate change by including categories such as ‘out of human control’ or beneficial effects. Each category was identified by reviewing the literature that focuses on framing of climate change and adapted in relation to the information emerging from direct reading of the articles. Therefore, a coding scheme sourced from previous studies was developed (see Table 2). Entman (1993) identifies that the foundation of framing lies in the process of selection and making a piece of news salient through provision of judgements, identification of agency and potential victims, categorisation and generalisation. Looking at the indicative example reported in Table 2, mockery was conceptualised as a category because it (a) judges the claims of climate change advocates’ as ‘alarmist’ (therefore, underestimating the problem), (b) identifies the BBC as an agent and (c) its audience as potential victim, (d) labels those responsible as ‘warmists’ and generalises the judgement to those who are ‘desperate to whip up alarm’ over global warming.

After reading and coding around 10% of the entire sample (92 newspaper articles), the original categories were adapted to the emerging traits. This 10% was re-coded by following the adjusted coding scheme (Table 2). Finally, a second researcher applied the adjusted coding scheme to the same sample of articles, meeting the accepted criteria for inter-coder reliability (Krippendorff alpha value of .82, see Hayes and Krippendorff, 2007). Table 2 reports the sub-categories, the sources and indicative coding examples.

The articles were read in their entirety and paragraphs with a focus on consequences were identified. Therefore, the focus of analysis is represented by the portion of the news article in which the consequences are discussed. The three hypotheses were explored through descriptive and multinomial regression analyses.

## **Results**

To explore the effect of both political orientation and bloc of years on the representation of the consequences of climate change, a Multinomial Logistic Regression was performed given that the categories included in this frame are not ordered (Kwak and

**Table 2.** Categories included in the frame to describe climate change consequences.

Category	Definition	Coding example
Mockery	The consequences of climate change are mocked/dismissed (see also Ereaut and Segnit, 2006)	It was another bad week for the 'warmists', now more desperate than ever to whip up alarm over an overheating planet [. . .]. To promote its cause, the BBC website even posted a video explaining how warming would be made worse by 'negative feedback'. This scientific howler provoked much amusement and derision on expert US blogs. (Booker, 2009)
Uncertainty	The consequences of climate change are likely to be negative, but not measurable (see also Heal and Kristrom, 2002).	The scenes might not be as dramatic as the mass migration and wars over diminishing resources that some predict, but they do show changes [. . .]. (Jowitt, 2007: 24)
Neutrality	Consequences are evaluated neither positive nor negative (Elgesem et al., 2015)	Overall, the world is getting warmer due to increasing greenhouse gas emissions that trap the sun's heat. (Zolfagharifard, 2015)
Alarming but controllable	The severe consequences of climate change can be controlled through intervention. (Risbey, 2008)	Reducing global warming to 2C, beyond which the impacts would start to become irreversible, 'will require large-scale changes [. . .]'. (Spencer, 2014)
Out of human control	The consequences of climate change are irreversible/beyond human control (see also Dirikx and Gelders, 2010).	'The changes are out of all proportion to anything that anyone has experienced in modern times', says Dr Wad-ham, and he fears much worse. (Simons, 1997: 8)

Clayton-Matthews, 2002). The Multinomial Logistic Regression is an appropriate method to explain the relationship between a categorical dependent variable (nominal) with more than two levels (categories) and one or more independent variables. It compares each level to a reference category, which is usually represented by the most frequent. The category 'alarming but controllable' was adopted as a reference since it is the most frequent one (43% of cases; El-Habil, 2012). Table 3 shows the distribution of categories per political orientation and bloc of years. The reference to the categories included in the frame was identified in 769 cases out of 958 articles.

Holding the political orientation constant, the bloc of years has a significant effect on adopting 'uncertainty' in describing consequences ( $p = .002$  in the first bloc and  $p = .006$  in the second bloc), 'neutrality' (relative to the first bloc of years,  $p = .008$ ), and describing consequences as 'out of human control' ( $p = .009$  in the first bloc and  $p = .036$  in the second bloc). This suggests that, extending these considerations to the entire population of articles, those articles belonging to the first two blocs are more likely to adopt 'uncertainty' to describe the consequences rather than alarming traits. Moreover, the adoption of neutrality is more likely than representing 'alarming but controllable' effects in the first bloc compared to the third one. However, there are no statistically significant



**Table 3.** Distribution of categories per political orientation and bloc of years.

Category	1988-1997		1998-2007		2008-2016		Total			
	Centre right	%	Centre right	%	Centre right	%	Centre right	Centre left		
Mockery	6	19	0	24	2	29	3	2	59	80
Uncertainty	6	19	32	20	50	8	32	17	34	7
Neutrality	10	31	26	16	36	23	48	25	49	114
Alarming but controllable	8	25	14	11	122	38	101	53	57	127
Out of human control	2	6	7	5	18	3	8	4	10	274
Total	32	-	76	-	230	101	192	-	209	560



**Table 4.** Multinomial logistic regression analysis predicting the description of consequences (*N* articles = 769).

Categories		<i>B</i>	<i>SE</i>	Exp( <i>B</i> )
Mockery	Intercept	-3.752*	.429	–
	1988–1997	-.279	.506	.757
	1998–2007	.280	.323	1.323
	2008–2016	Ref.		
	Centre/right	3.710*	.428	40.835
	Centre/left	Ref.		
Uncertainty	Intercept	-1.368*	.193	–
	1988–1997	.861*	.277	2.365
	1998–2007	.644*	.234	1.905
	2008–2016	Ref.		
	Centre/right	.464	.248	1.590
	Centre/left	Ref.		
Neutrality	Intercept	-.860*	.162	–
	1988–1997	.647*	.242	1.911
	1998–2007	-.206	.221	.813
	2008–2016	Ref.		
	Centre/right	.661*	.226	1.937
	Centre/left	Ref.		
Out of human control	Intercept	-2.630*	.332	–
	1988–1997	1.140*	.435	3.128
	1998–2007	.813**	.388	2.255
	2008–2016	Ref.		
	Centre/right	.368	.389	1.444
	Centre/left	Ref.		

Model Fit: chi-square = 110.418 ( $p = .000$ ); Goodness of Fit: Person chi-square = 15.396 ( $p = .052$ ); Deviance chi-square = 13.964 ( $p = .083$ ); Nagelkerke = .207.

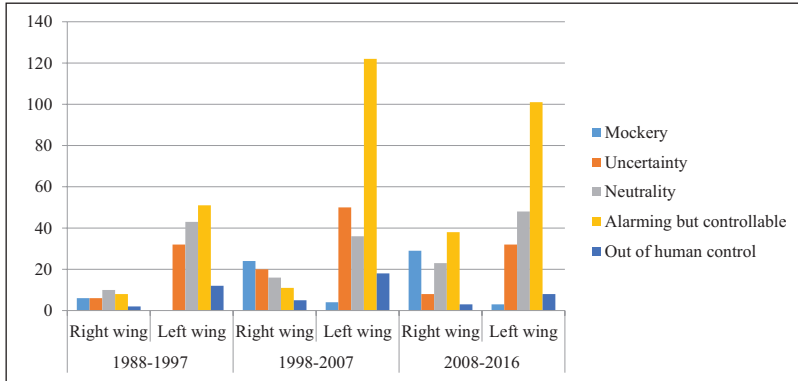
The reference category is alarming but controllable.

\* $p < .01$ ; \*\* $p < .05$ .

differences in adopting this category compared to ‘alarming but controllable’ category between the second and the third blocs.

H1 related to a generalised decrease in describing climate change as ‘out of human control’ is supported given that this scenario is more likely to be present in the first two blocs than in the third one, compared to the representation of climate change as alarming but controllable (see Table 4). This happens regardless of the political orientation of the newspapers.

For the centre/left-leaning narratives, the mockery of consequences is absent in the first bloc, slightly increases in the second bloc and decreases in the third bloc. The representation of ‘alarming but controllable’ consequences prevails across the three blocs. However, Figure 1 shows that in the third bloc there is a reduction in describing the consequences of climate change as out of human control, alarming but controllable, and



**Figure 1.** Distribution of categories included in the ‘consequences frame’ across the three blocs (absolute values).

uncertain for the centre/left-leaning articles, and an increase in neutrality. These results reject H2a due to a decrease in the alarming categories across the three blocs for the centre-left. However, the decrease in uncertainty and the increase in neutrality for this group support H2b and H2c, respectively. This might suggest a shift towards recognising the reality of the consequences caused by climate change, without providing evaluations (either positive or negative). Even though the adoption of uncertainty does not show statistically significant differences between the centre-left and the centre-right, uncertainty is more likely to be adopted in the first two blocs. Moreover, the centre-right appears to be more likely to use uncertainty compared to the ‘alarming but controllable’ category than their counterparts (despite not statistically significant, the multinomial log-odds are expected to increase 1.59 times for centre-right articles).

Differences in the representation of the consequences of climate change between centre/right and centre/left-leaning newspapers were statistically significant for the categories of mockery and neutrality relative to ‘alarming but controllable’ (respectively,  $p = .000$  and  $p = .003$ ; Table 4). Therefore, holding the bloc of years constant, the multinomial log-odds of adopting both mockery and neutrality compared to ‘alarming but controllable consequences’ would be expected to increase for articles belonging to a centre/right-leaning newspaper. Moreover, the multinomial log-odds for an article belonging to centre/right-leaning newspapers to adopt mockery frames are higher than any other kind of representation of consequences. These results support H3 about the tendency of the centre/right-leaning newspapers to adopt mockery frames more than any other kind of representation of consequences.

However, Figure 1 shows that, in addition to mockery, a simultaneous increase in both neutrality and alarm characterises the third bloc. This suggests that centre-right narratives can follow different directions by, for example, trivialising climate change or, in contrast, supporting the idea that climate effects can be tackled. Therefore, even though the mockery of climate change is a peculiarity of the centre-right group, the articles belonging to this group do not follow a unique direction.

## Considerations and conclusions

The analysis supported a generalised decrease in representing the consequences of climate change as out of human control, regardless of the political orientation of newspapers. It also showed differences between centre-left and centre-right newspapers. In fact, the centre-right group is more likely to adopt mockery and neutrality compared to the representation of controllable consequences. Even though the framing of climate change as ‘alarming but controllable’ is a peculiarity of the centre-left, its use decreases in the third bloc by suggesting a shift in centre-left narratives towards neutrality. In fact, in the third bloc the adoption of neutrality increases whereas framing climate change as both ‘out of human control’ and ‘alarming but controllable’ decreases, further reinforcing a preference for neutrality in this bloc.

An increase of mockery by the centre-right is also supported. However, an increasing adoption of alarm to describe the effects of climate change (which, however, can be contained if action is taken) by the right-leaning articles was also observed. The use of both mockery and ‘alarm’ to frame the consequences in the right-wing oriented narratives shows that not only mockery characterises right-leaning narratives (see Carvalho, 2005, 2007; Carvalho and Burgess, 2005; Ereaut and Segnit, 2006), but the increasing mention of alarming consequences in this group across the three blocs suggests that the reference to severe but controllable consequences is no longer exclusive to left-leaning narratives. These results are in line with the disappearance of optimism in conservative newspapers identified in 2006/2007 by Doulton and Brown (2009), and their replacement with discourses related to the damages caused by climate change. In contrast, ‘crisis-oriented’ discourses dominate in the progressive newspapers. This is also in line with Nerlich et al. (2012) who found that the United Kingdom, unlike the United States, focuses on finding solutions, which in turn suggests that climate change can be ‘tackled’.

The analysis showed that the description of climate change as ‘out of human control’ for the centre-left group decreases in the third bloc. This might be contextualised in light of an increasing awareness around the potential side effects of framing climate change as out of human control when describing its impact, which as noted, can contribute towards causing feelings of powerlessness. It is only possible to speculate on this point, however, these results show the complexity and variety of climate change narratives, which present specific traits in relation to the political orientation of newspapers. In this direction, the originality of this article relies on showing how climate change narratives have become complex, and the focus on consequences is relevant to understanding this complexity. This article showed that such complexity can be partially explained by both the political orientation of newspapers and the period considered. These results suggest a need for shifting the focus from the existence/causes of climate change towards its consequences. In previous work, the Author (2020) found that in the same period, an increasing consensus around the existence of climate change and its causes could be identified. However, this study highlighted the need to investigate additional aspects of climate change narratives that still contribute towards emphasising scepticism in newspaper reporting. In this previous study, the attention to consequences was limited to the representation of scientific consensus around certainty/uncertainty of consequences. The apparent increase of consensus around consequences suggested a need to re-conceptualise the consequences

frame by considering a variety of framing attributes.<sup>1</sup> Therefore, the originality of this article also relies on identifying specific attributes of the consequences of climate change by expanding the consequences frame beyond the mere recognition of their existence.

The sample included in this study is representative of three groups of years. One limit of this approach is the loss of power that a continuous variable could have provided in capturing the evolution of narratives over time. However, the analysis of the adoption of a ‘consequences frame’ within each bloc provides the opportunity to compare the presence of specific categories across the blocs. For example, it shows that even though the description of climate change as ‘alarming but controllable’ is a peculiarity of the centre-left, neutrality is the only category that grows between the second and the third blocs in this group. In contrast, there is a tendency for the centre-right to mock the consequences of climate change, which might contribute towards inflaming hostility against scientists.

It is generally recognised that news media adopt sensationalism to attract and drive people’s attention towards specific (non)-intervention strategies (Bennett, 2005; Figenschou and Thorbjørnsrud, 2015; Kim and Wanta, 2018). Even though this study showed a decrease in representing climate change as uncontrollable, several studies that focus on the public perception of climate change highlighted that the UK public perceive a generalised media alarmism around climate change (Whitmarsh, 2011). However, the presence of both mockery and alarm around the consequences in the same political group can contribute towards creating a ‘confusing image’ of climate change. For their part, individuals have to interpret contradictory and misleading information, and this has been found to cause loss of confidence on the reality of climate change (Somerville and Hassol, 2011). The main implications of these results relate to both theoretical and empirical levels. The conceptualisation of the consequences frame, which includes several categories plus mockery, offers the possibility of observing the complexity of climate narratives. In fact, this work suggests that mockery can be conceptualised as a frame given that it includes judgements, selection, label and derision of agents (climate change advocates), identification of victims (those exposed to ‘false alarmism’) and generalisation of these judgements about climate change. This study identified a complex variety of representations of the consequences of climate change that might increase ‘confusion’, and therefore, might contribute towards affecting readers’ confidence in climate science.

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### **ORCID iD**

Maria Laura Ruiu  <https://orcid.org/0000-0003-1136-0389>

## Note

1. The different conceptualisation of the consequences frame also explains a slightly higher number of articles (769) in which the reference to specific types of consequences was identified. In fact, in the previous work the reference to certainty/uncertainty was found in 758 cases.

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