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Reference:

Males Jennifer, Van Aelst Peter.- Did the Blue Planet set the agenda for plastic pollution? An explorative study on the influence of a documentary on the public, media and political agendas
Environmental communication - ISSN 1752-4032 - Abingdon, Routledge journals, taylor & francis ltd, 2020, p. 1-15
Full text (Publisher's DOI): <https://doi.org/10.1080/17524032.2020.1780458>
To cite this reference: <https://hdl.handle.net/10067/1703940151162165141>

Did the Blue Planet set the agenda for plastic pollution? An explorative study on the influence of a documentary on the public, media and political agendas.

Introduction

Over the past decade or so, reactions to documentary films have led to the idea that documentaries are able to spark interest in the issues they portray, generate public debate and even influence policymakers (Nisbet and Aufderheide, 2011). For instance, the documentary *An Inconvenient Truth*, by former U.S vice-president, Al Gore, was seen by people all over the world and sparked a public and political debate about climate change (Pearce and Nerlich, 2017). There is growing consensus that these types of films are no longer intended solely to entertain or inform the public, but are in fact, a strong potential advocate for relevant social issues (Nisbet and Aufderheide, 2011:450). The recent BBC documentary, *The Blue Planet*, was an environmental documentary series that dived into the planet's marine environment and was able to generate interest in the issue of plastic pollution. Although this was not the documentary's original intention, it was able to spark a global debate around our addiction to plastic and its effects on the environment. Knowing the extent to which it set the agenda for the issue of plastic pollution is important since it indicates the potential powerful role documentaries can have in setting the agenda for the issues they advocate as well as the possibility of promoting them as a viable media source to increase public saliency on certain issues. Furthermore, analysing the saliency of plastic pollution in the three domains of agenda-setting (public agenda, media agenda and political agenda) is central to understanding the degree to which *The Blue Planet* set the agenda for this issue and helps to understand why the BBC was so successful in engaging citizens, journalists and politicians.

Documentary films have been growing in popularity in recent years and have been used as way of informing the public about a variety of topics, ranging from gun violence (e.g. *Bowling for Columbine*) to food and health (e.g. *Supersize me*) (Nadeau, 2011). Originally, scholars within the field of communication were interested in exploring how the print media influenced the public to think about certain issues and how often (McCombs and Shaw, 1972). News coverage by newspapers, radio, and later television, were among the only types of media that were available for communicating vital news stories to the public and able to set the public agenda. More recently however, the agenda-setting literature has opened up to new types of media including documentaries, which have been found to have substantial effects on viewers (Nadeau, 2011). As the internet has grown, filmmakers have become increasingly able to promote their films and reach larger audiences. Thus, the production of documentaries has increased and more and more people are using them as a way of becoming informed about certain issues (Karlin and Johnson, 2011). However, much of the media and communication literature has overlooked the extent to which they can set the agenda (Nisbet and Aufderheide, 2011). Past studies have focused on the effects of documentaries on a variety of issues including attitudes towards schizophrenics (Penn, Chamberlin, and Mueser, 2003), foreign policy issues (Nadeau, 2011), and the impacts of environmental documentaries on environmental sensitivity (Barbas, Paraskevopoulos, and Stamou, 2009). So far, despite interest in the documentary domain, research dedicated to plastic pollution alone appears to be non-existent. Consequently, research within this domain is vital in extending the agenda-setting literature and useful for understanding how plastic pollution became a more prominent issue on the public, media and political agendas.

This paper begins by detailing the theory of agenda-setting in order to understand how and why certain issues become relevant in society. It specifically focuses on three main components – the public agenda, the media agenda and the political agenda and explores the possibility of *The Blue Planet* setting all three agendas for the issue of plastic pollution. The results imply that the documentary was extremely influential in generating interest in plastic pollution by the public, media and politicians, suggesting that documentaries can be used as a powerful tool for advocating issue salience. Although *The Blue Planet* appears to have been a triggering event for plastic pollution awareness, we recognise that all three agendas were likely reinforcing the others which is a key characteristic of the agenda-setting theory. However, this research focuses primarily on exploring *The Blue Planet's* influence on each agenda separately. In the conclusion we will briefly elaborate on the relationships between the three agendas.

The Theory of Agenda-setting and The Blue Planet

The agenda-setting theory has become a dominant paradigm in the field of communication for understanding how the media plays a role in influencing public perception about the salience of an issue. The theory was first pioneered by McCombs and Shaw (1972) in their 1968 presidential election campaign study which looked at the effects of the media on the issues that mattered for voters. The study concluded that the level of emphasis the media placed on a certain issue correlated with the level of salience among the public. Since then, an abundance of literature has been published on the agenda-setting effects of news-media on public opinion (Rogers, Dearing, and Bregman, 1993; Weaver, 2007).

The agenda-setting theory rests on two basic assumptions (Dearing and Rogers, 1996). First, that the media filters and shapes stories rather than just mirroring events. For example, stories are often sensationalised or dramatised to generate more interest in an issue. Second, if the media gives more attention to an issue, the public will more likely consider it to be important. Research into this theory indicates a significant relationship between the level of coverage by the media of certain topics and the degree of salience of these issues among the general public (Ader, 1995; Dotson, Jacobson, Kaid, and Carlton, 2012). This goes back to the famous quote of Bernard Cohen that the media may not be very successful in telling its readers what to think, “But it is stunningly successful in telling its readers what to think *about*,” (Cohen, 1963:13).

The original agenda-setting theory was later extended in two directions. First, some public policy and political communication scholars opened the theory up to the extent to which the media are also able to influence political actors and institutions to prioritise certain issues (Van Aelst and Walgrave, 2016). Starting from the limited attention of policy makers for a wide range of political issues, *political agenda-setting* studies see the media as one of the possible factors that could influence the issue priorities of policy makers. Second, if the media was potentially so influential, the question was raised, who set the media agenda? This led to a subfield of *inter-media agenda-setting* research concerned with measuring the extent to which news content transfers between different media (Atwater, Fico, and Pizante, 1987). The assumption is that journalists tend to let their coverage be partly guided by the coverage of their competitors and peers. Traditionally studies identified high profile newspapers to be leading, influencing radio, television, and other newspapers (Vliegenthart and Walgrave 2008). Later on, studies also started integrating social media as a potential new sort of inter-media agenda-setter (Harder, Sevenans, and Van Aelst, 2017). Although, some studies have called for the theory to also include documentaries as a type of media (Shah, McLeod,

Gotlieb, and Lee, 2009), there appears to be only a handful of research dedicated to understanding how powerful documentaries can be in setting the agenda. Consequently, documentaries are well suited to testing the basic agenda-setting idea: the transfer of issue salience from one actor to another. The focus of a documentary on a specific issue allows us to study how this influences other actors (citizens, journalists, politicians) to devote more attention to an issue. In other words, using the agenda-setting theory allows us to study whether documentaries can be considered as an alternative media source of public and political influence.

In sum, agenda-setting research has evolved and extended and now includes three main components; the public agenda (which issues are important to the public), the (inter-)media agenda (which issues are important to the media) and the political (policy) agenda (which issues are important to political actors). To assess whether and to what extent *The Blue Planet* set the agenda for plastic pollution, we analyse its influence on the public, media, and political agendas. For the effect on each agenda, we develop a concrete, measurable hypothesis based on existing literature.

A wealth of communication research has focused on understanding how the media determine the priorities of the public. Research on *public agenda-setting* has focused on the importance of a set of issues on the public agenda and what influences the public to view these issues as important (Berkowitz, 1992). Studies have suggested that online search queries are a good indicator of whether issues are important to the public or not (Maurer and Holbach, 2016). Online queries identify the frequencies people search for certain terms online and provide a real-time and valid measurement of a topic's salience on the public agenda (Whyte, 2016). If the frequencies are high, we can assume that the public is interested in the issue. The internet has been used to show how public opinion has changed on certain issues over the years and how documentary films affect public perception (Vasi, Walker, Johnson, and Tan, 2015). In their study on the relationship between the documentary *Gasland* and public opinion, Vasi and colleagues (2015) demonstrated how the documentary led to an upsurge in online searches related to the issue (fracking) presented in that documentary. Boukes (2018) also found that exposure to a political satire television show on a free trade agreement generated an increase in online searches regarding that issue. Both these studies indicate that the public were more likely to search for information online about the issues presented in the show. Therefore, for this study, we can hypothesise that:

H1: *The Blue Planet's* release led to an increase in online public attention towards plastic pollution.

The media agenda-setting part of this study, conceptualised in this research as *inter-media agenda-setting*, focuses on the influence of a documentary as a specific media source on the broader media agenda. The popularity of documentaries has been growing in recent decades where they have been seen to also influence traditional news outlets (Nisbet and Aufderheide, 2011). For example, in 2006, Al Gore's film, *An Inconvenient Truth*, generated a rise in coverage by the media on climate change, particularly in western countries such as the UK (Anderson, 2009). The documentary *Gasland*, also generated mass media coverage on the issue of fracking where more articles were published related to that issue after the documentary was released (Vasi et. al., 2015). In a similar way, other film genres have also been influential in setting the media agenda. For example, in 1994, empirical evidence has shown that *Schindler's List* set the Canadian media agenda for the number of Holocaust-

related articles published by the print media (Soroka, 2000: 212). These studies indicate that documentaries have been influential in generating media interest in the issues they advocate. Furthermore, the rise of social media has allowed certain documentaries to reach higher prominence on the media agenda by increasing audience appeal and having a stronger social impact (Karlin and Johnson, 2011:1). Therefore, for this research we can postulate that:

H2: *The Blue Planet's* release led to an increase in media attention towards plastic pollution.

The ability of the public and media to generate political debate and influence policy makers to become more interested in a certain issue is part of the *political agenda-setting* process (Van Aelst and Walgrave, 2016). This process occurs when something or someone generates a reaction from politicians either through discussion or through action. Although little is known about the extent to which documentaries can influence policymaking (Vasi et. al., 2015: 935), there is some proof that they can initiate political debates over social issues (Nisbet and Aufderheide, 2011:450). Recently, a documentary in New Zealand sparked political debate over the use of medical marijuana with the government now considering its use by those with chronic conditions (Gillespie, 2018). Also, Boukes (2018) found that after a popular Dutch political infotainment show discussing a free trade agreement was broadcast, that issue was communicated more often in parliament and once on the agenda, it remained there. Therefore, we expect that:

H3: *The Blue Planet's* release led to an increase in political debates around plastic pollution.

In line with research on so-called 'key events' (Zerback, Reinemann, Van Aelst, and Masini, 2020) or 'focusing events' (Birkland, 1997), we will investigate to what extent *The Blue Planet* triggered the interest of the general public, journalists and policymakers. We are, of course aware that all three agendas influence each other in the agenda-setting process and likely each one played a part in heightening interest in plastic pollution by the other two. This research focuses, however, predominantly on the initial influence of *The Blue Planet* on the three agendas and each is discussed separately. Where possible, insightful references are made in the results section to the relationship between one agenda and another.

Research Design

This research seeks to understand the contribution of *The Blue Planet* to setting the public, media and political agendas for the issue of plastic pollution in The UK. The BBC documentary series, *The Blue Planet*, was a follow-up to the 2001 award-winning show of the same name. It consisted of seven episodes, broadcast by the BBC weekly between 29 October and 10 December 2017, and one clip show, broadcast on 1 January, 2018. Narrated by naturalist Sir David Attenborough, it offered viewers a unique insight into our oceans and marine life. The documentary topped television ratings in 2017, with over fourteen million UK viewers in the first episode (BBC News, 2018) and has been subsequently broadcast across the world. Both the fourth episode (broadcast on 19 November) and the final episode (broadcast on 10 December) highlighted the devastating impact of human activity on marine life, illustrating in particular the effects of ocean plastic pollution. Since then, it has been heralded as a key moment in sparking debates around plastic waste (BBC News, 2018) but the extent to which it set the agenda for plastic pollution is unclear.

A high level of interest in and/or discussion of plastic pollution is utilised as an indicator of whether *The Blue Planet* was successful in setting the public, media and political agendas for

this topic. All three agendas were measured using similar designs with a combination of both a simple prominence analysis and a quantitative content analysis of media coverage and parliamentary debates. The prominence analysis provides an indication of the overall levels of interest in plastic pollution with the quantitative content analysis offering a more in-depth investigation into the agenda-setting ability of *The Blue Planet*.

A simple prominence analysis using Google Trends was used to test the effect of *The Blue Planet* on the public agenda. The search trend analyses the popularity of search queries on Google and is able to provide data on how frequently a term is searched relative to the site's total search volume over a given time. If the popularity of a search query is high, we can assume that the public is more interested in that issue. Using a simple trends engine allows an unobtrusive observation of the public and enables data to be collected from the period of *The Blue Planet's* broadcasting. In order to test hypothesis 1, the terms, 'plastic pollution,' 'plastic waste,' 'ocean plastic' and 'ocean litter,' were employed to assess the level of interest in plastic pollution over a variety of time periods. Since internet penetration in the UK is above 80%, with Google being the most popular search engine in the UK, holding a current 87% market share (O'Dea, 2019), we believe this approach to measuring the public agenda is sufficiently externally valid.

In order to test whether *The Blue Planet* set the media agenda for plastic pollution, a prominence analysis along with a quantitative content analysis of print media articles in two leading British newspapers were chosen. The Guardian and The Daily Mail (and Mail on Sunday) offer opposing formats as well as differing political orientations. The Guardian, a broadsheet, offers a centre-left stance while The Daily Mail, a tabloid, offers a right-wing, conservative position. Although other types of media (radio, TV, online articles) could have been used, print media still remains a popular news source, especially among those with higher levels of news literacy (Newman, Fletcher, Kalogeropoulos, Levy, and Nielsen, 2018) and remains a good reference point for other types of media for understanding how events are interpreted (Cushion, Kilby, Thomas, Morani, and Sambrook, 2018). LexisNexis was used to obtain the relevant print media data. For the prominence analysis, data was taken from the very first mention of any of the key terms (plastic pollution, plastic waste, ocean plastic and ocean litter) until the end of 2018 to illustrate how plastic pollution saliency has increased over time. A total of 1012 articles from both newspapers were retrieved. For the quantitative content analysis, data was taken from the day after the first episode was broadcast (30 October 2017) until three months after the last episode (31 March 2018). This allowed us to evaluate the long-term agenda-setting effects of the documentary and to provide implications for the future of plastic pollution saliency. For the more in-depth content analysis, the articles that mentioned only one sentence in relation to plastic pollution were omitted. Via the content analysis of 226 articles (The Guardian N=102, The Daily Mail N=124) we explored why journalists were writing about the issue of plastic pollution and whether this could be attributed to the documentary or not. Although the content analysis alone does not allow us to know whether the journalists were influenced by the documentary when writing about the issue of plastic pollution, it allows us to explore and make assumptions about the documentary's influence. Therefore, in-depth interviews with journalists would strengthen our study and is suggested for further research.

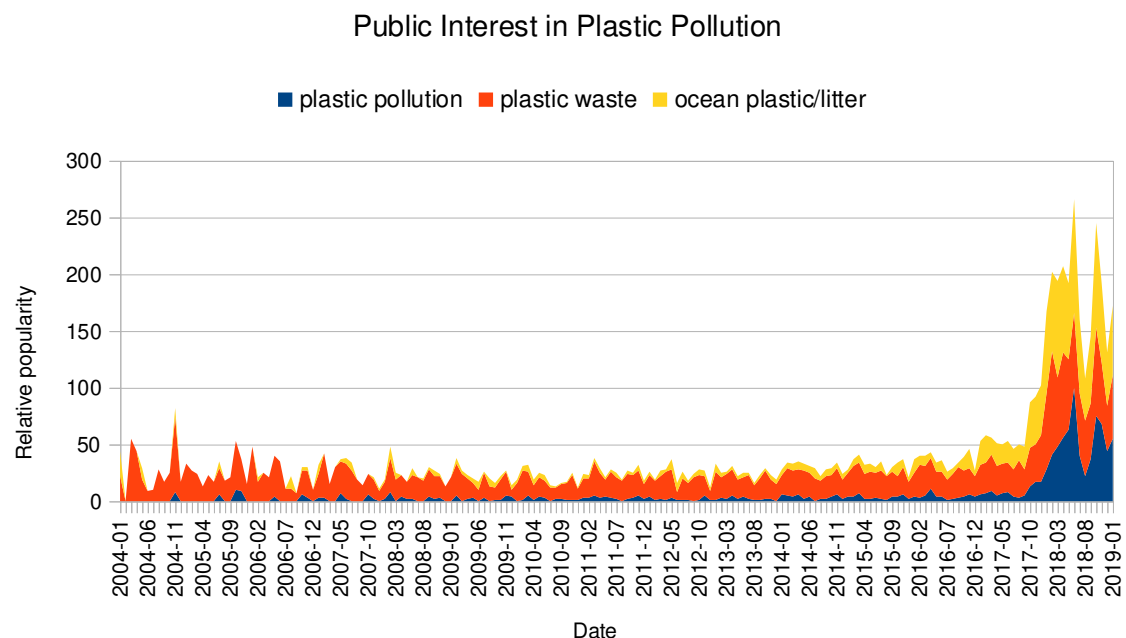
Political agenda-setting studies seldom study 'the political agenda' but rather one or two more concrete institutional agendas. In line with others we measure the political agenda mainly via parliamentary debates. As with the media agenda, a prominence analysis and a quantitative content analysis were carried out to analyse these political debates. The UK political database,

Hansard, offers transcripts of debates from both the House of Commons and the House of Lords. It portrays the issues politicians deem salient at any given period and is viewed as a valid way of analysing the political agenda. In addition to these parliamentary debates, quotes from the content analysis of both newspapers were utilised to support the effect of *The Blue Planet* on political actors more broadly, including members of government. The terms 'plastic pollution,' 'plastic waste,' 'ocean plastic' and 'ocean litter,' were used to search the database. The prominence analysis includes the total number of speakers mentioning any of the key terms since 1980 until the end of 2018 (N=673). The quantitative content analysis focuses on the debates between the day after the first episode was broadcast (30 October 2017) until three months after the last episode (the clip show - 31 March 2018). This resulted in 41 parliamentary debates.

Results

The Public Agenda

To test the effects of *The Blue Planet* on the public agenda we used Google web searches of 'plastic pollution,' 'plastic waste,' 'ocean plastic' and 'ocean litter.'¹ Figure 1 displays the trends in overall public interest in the issue of plastic pollution from the beginning of 2004 (first available date on Google Trends) until the end of 2018. The results show that there was a significant increase in the relative popularity of the search terms as of October, 2017, with 'plastic pollution' and 'ocean plastic' being the most popular phrases searched. This provides evidence that the public within the UK became predominantly interested in the issue of ocean plastic pollution post-October, 2017, which was shown to continue throughout 2018. Although the popularity of these terms fluctuated in 2018, with a significant decrease in August 2018 and a rise again by October 2018, in general, the search terms remained popular. Once the issue of plastic pollution became high on the public agenda, it remained there.



¹ The data obtained for the terms 'ocean litter' and 'ocean plastic' were combined, since they both individually did not produce a significant level of relative popularity to be detailed in their own right.

Figure 1: Online public interest in the issue of plastic pollution using Google search popularity (2004-2018).

Figure 2 details the trends in plastic pollution interest between two key dates. The popularity of search terms were analysed over the course of the series broadcasting and two main peaks in interest were evident in the results. Both November 19 and December 10 saw sharp increases in the popularity of 'ocean plastic' as a search term. This is significant since the only two episodes of *The Blue Planet* that explicitly mentioned the effects of plastic pollution in our oceans, were broadcast on these dates. Although all other search terms remained low during this period, there was clearly strong interest in ocean plastic. Our results also showed that on each of these dates the relative popularity of the search term 'the blue planet' goes hand in hand with the search term 'ocean plastic' illustrating that both search terms were equally popular among the public. Therefore, it appears to be likely that *The Blue Planet* had a significant effect on public interest in plastic pollution leading us to believe it had agenda-setting effects. Thus, we agree there is sufficient evidence to confirm our first hypothesis. The results indeed appear to indicate that *The Blue Planet's* release, and the two crucial episodes in particular, led to an increase in online public attention towards plastic pollution.

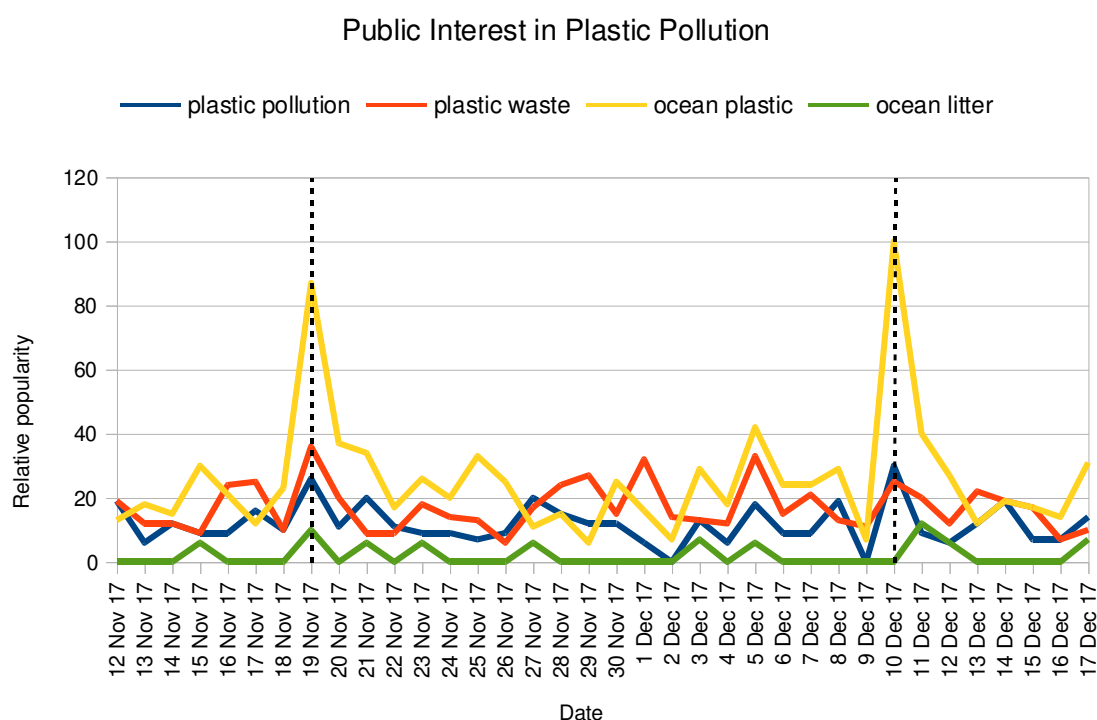


Figure 2: Online public interest in the issue of plastic pollution using Google search popularity (Nov 2017 – Dec 2017).

The Media Agenda

Similar to the public agenda, we analysed the prominence of plastic pollution on the media agenda by looking for articles that mentioned the terms 'plastic pollution,' 'plastic waste,' 'ocean plastic' or 'ocean litter.' Figure 3 displays the number of newspaper articles from The Guardian and The Daily Mail that mention any of the key terms, from the very first mention

in relation to plastic pollution in 1990, until the end of 2018. For both newspapers, media coverage of this issue increased gradually from 2015, with a steep rise between 2016 and 2018. In 2015, a total of 47 articles (Guardian N=44, Daily Mail N=3) were published on the issue of plastic pollution, rising to 85 in 2016 (Guardian N=64, Daily Mail N=21), 193 (Guardian N=105, Daily Mail N=88) in 2017 and an astonishing 502 (Guardian N=270, Daily Mail N=232) in 2018. Plastic pollution clearly became an important issue for the media in 2017 and remained significant throughout 2018.

Unexpectedly, The Daily Mail portrayed a slight, but remarkable peak in interest in plastic pollution in 2008. It turns out the popular paper began campaigning to end the scourge of plastic in the environment. The *Turn The Tide on Plastic* campaign focused on banishing plastic bags, introducing a plastic bottle deposit scheme, reducing the amount of non-recyclable coffee cups being used every day within the UK and banning toxic plastic micro-beads in cosmetic products (Mail Online, 2018). This indicates not only that The Daily Mail had long been interested in promoting solutions to the problem of plastic pollution, but also that the campaign was not very successful as the attention for the issue faded after 2008. It was not until *The Blue Planet* aired that the newspaper renewed its campaign on plastic pollution (with a ten year celebration) and started heavily covering the issue. Aside from this campaign, there appeared to be no other major incidents or events related to plastic pollution that were repeatedly mentioned by either newspaper.

Print Media Prominence Analysis

The Guardian and The Daily Mail Interest in Plastic Pollution

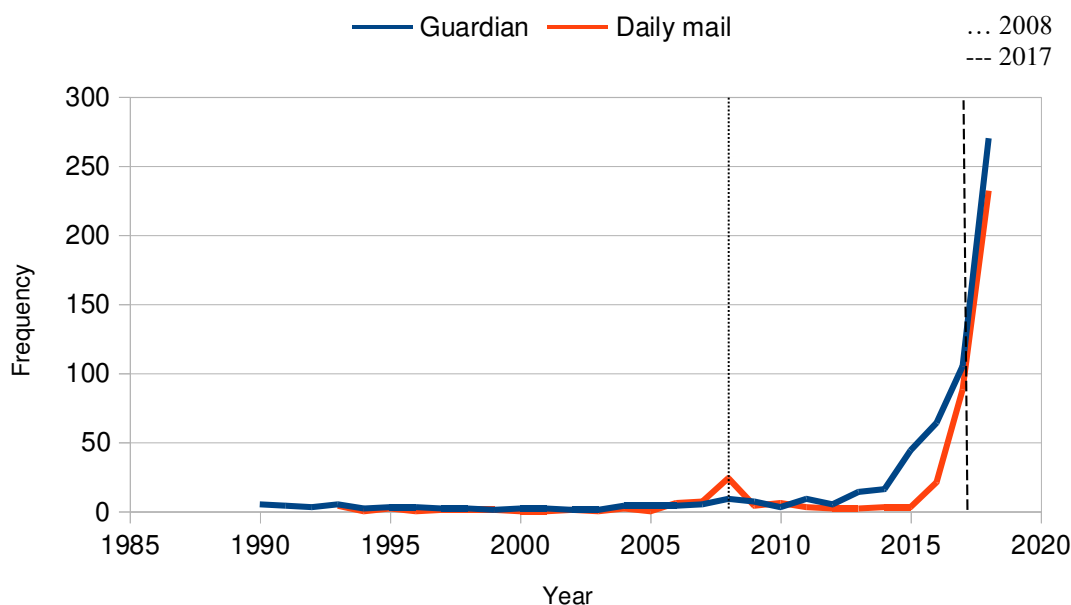


Figure 3: The number of articles in the Guardian and Daily Mail on the issue of plastic pollution (1990-2018).

Figure 4 provides a more detailed analysis of media interest in plastic pollution in 2017 and 2018. In general, there was a gradual increase in interest before November, 2017, where the number of related articles that were published rose from 28 in November, to 63 in December

and 79 in January. There was a significant level of interest in both December, 2017 and January, 2018 and throughout 2018, both newspapers remained committed to publishing articles on the topic. This provides evidence of a long-term agenda-setting effect for the issue of plastic pollution.

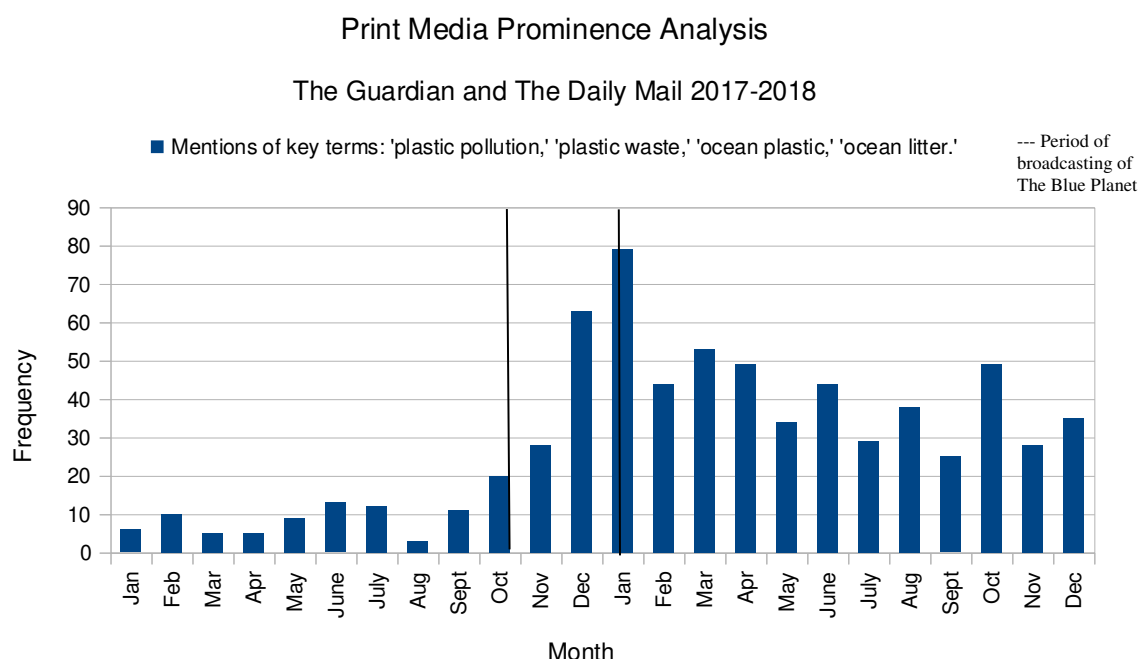


Figure 4: The number of articles in the Guardian and Daily Mail on the issue of plastic pollution (2017-2018).

A quantitative content analysis of 226 articles (The Guardian N= 102, The Daily Mail N= 124) enabled a further in-depth analysis of the causes of this rise in interest in the issue of plastic pollution. We analysed the number of articles that mentioned either *David Attenborough* or *The Blue Planet* on a weekly basis. Only two weeks stood out as having a higher number of mentions: weeks commencing 13 and 20 November, 2017. This rise in interest may have been attributed to the first episode that mentioned the effects of plastic pollution on marine life, which aired on 19 November. Although explicit references to the documentary subsequently faded away, the issue remained on the media agenda. In support of our second hypothesis, both newspapers mentioned the agenda-setting effects of *The Blue Planet* several times throughout the period of analysis. The Daily Mail stated how, “*Support has grown following alarming evidence from Sir David Attenborough's Blue Planet BBC series which featured the threat posed by plastic pollution to marine creatures,*” (1/12/2017). The Guardian later also mentioned how, “*The BBC's hugely popular Blue Planet series and a stream of scientific studies have made us aware of how the oceans are being polluted,*” (28/03/2018). Both statements suggest that the documentary was influential in leading the media to be more interested in the effects of plastic pollution on the environment and public health and illustrate its popularity and support among the public at large.

The number of articles detailing plastic pollution in our oceans and other bodies of water as well as the effects on marine life lead us to believe that *The Blue Planet* was an influential media source. The results show that The Daily Mail (69% of articles) was much more interested in discussing plastic in our oceans and other bodies of water than The Guardian (40%). This illustrates that it is not just about the issue of plastic pollution, but particularly the

issue of plastic in our oceans, on which *The Blue Planet* focused. Also, the subsequent effect on marine life was featured much more in The Daily Mail (54%) compared to The Guardian (31%). The latter newspaper had a broader focus on plastic pollution and focused less specifically on the problem it caused for marine life.

Although we cannot imply that the documentary directly influenced each journalist to write about the issue, both the prominence analysis and the quantitative content analysis have provided evidence to suggest that *The Blue Planet* had media agenda-setting effects for the issue of plastic pollution. The newspapers displayed a higher level of interest in plastic pollution after the documentary was broadcast which remained high throughout 2018. Further to this, both newspapers made explicit references to the documentary and its influence on the awareness of plastic pollution. As a result, we believe there is sufficient evidence to confirm our second hypothesis; *The Blue Planet's* release led to an increase in media attention towards plastic pollution.

The Political Agenda

The political agenda was largely narrowed down to discussions in parliament, which we consider as a first indication of an issue becoming politically salient. The UK parliamentary debates containing the terms 'plastic pollution,' 'plastic waste,' 'ocean plastic' or 'ocean litter,' were analysed. Figure 5 displays the number of speakers mentioning any of the key terms from the very first mention in 1980, until the end of 2018. The graph shows that in general, not many speakers addressed the issue of plastic pollution before 2017, except in 2003 and 2008, where the data peaks slightly at 42 and 49 respectively. This indicates that at least some politicians addressed the issue at times when the public was much less concerned². In 2015 and 2016 politicians took some measures such as the introduction of a 5 pence charge on single-use plastic bags in supermarkets as well as calls by MPs to ban micro-beads in cosmetic products in September 2016. The number of speakers mentioning any of the key terms in parliament, however, remained relatively limited to 22 in 2016. In 2017 that number suddenly doubled to 46, and 2018 witnessed a steep rise to an astonishing 184 speakers discussing the issue of plastic pollution. Plastic pollution clearly became an important issue for discussion within The House of Commons and The House of Lords in 2017 and it remained significant throughout 2018.

To illustrate exactly when the issue of plastic pollution became salient, figure 6 represents the total number of speakers mentioning any of the key terms during parliamentary debates between January 1st, 2017 and December 31st, 2018. As shown in the graph, there was a steep increase from December, 2017 to January, 2018, illustrating that the issue suddenly became particularly salient for politicians. The level of interest in January, 2018 correlates with the media agenda (Figure 4) where both saw an increase in plastic pollution saliency. However, where interest generally remained constant in 2018 for the media agenda, it fluctuated each month for the parliamentary agenda, with May and November of 2018 detailing the highest levels of interest.

² It is clear from the title of the debates that these peaks were due to discussions around the management of plastic waste, plastic packaging and plastic recycling. In 2008 however, more debates began around climate change and the amount of waste (including plastic) produced by supermarkets.

Political Agenda Prominence Analysis

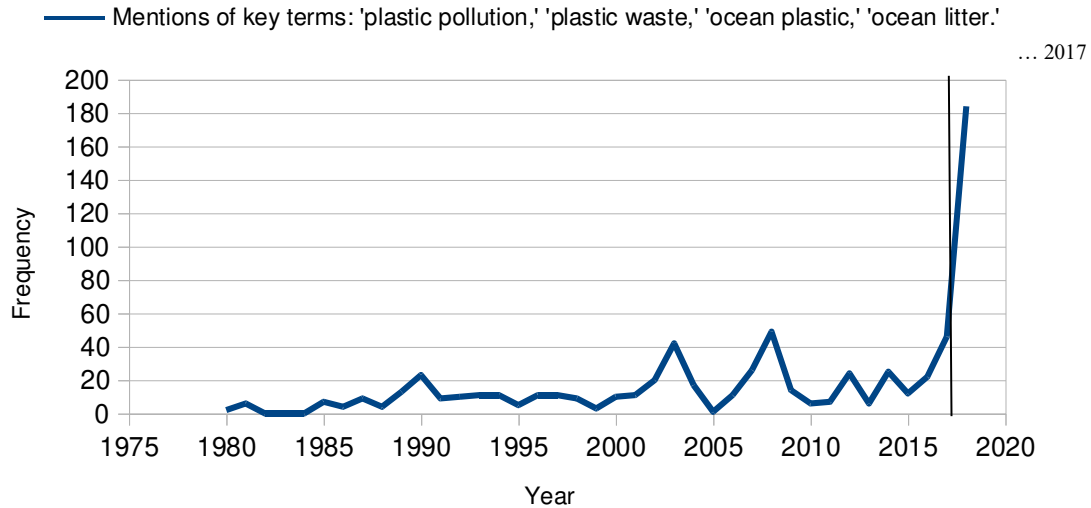


Figure 5: Number of speakers in parliament on the issue of plastic pollution (1980-2018).

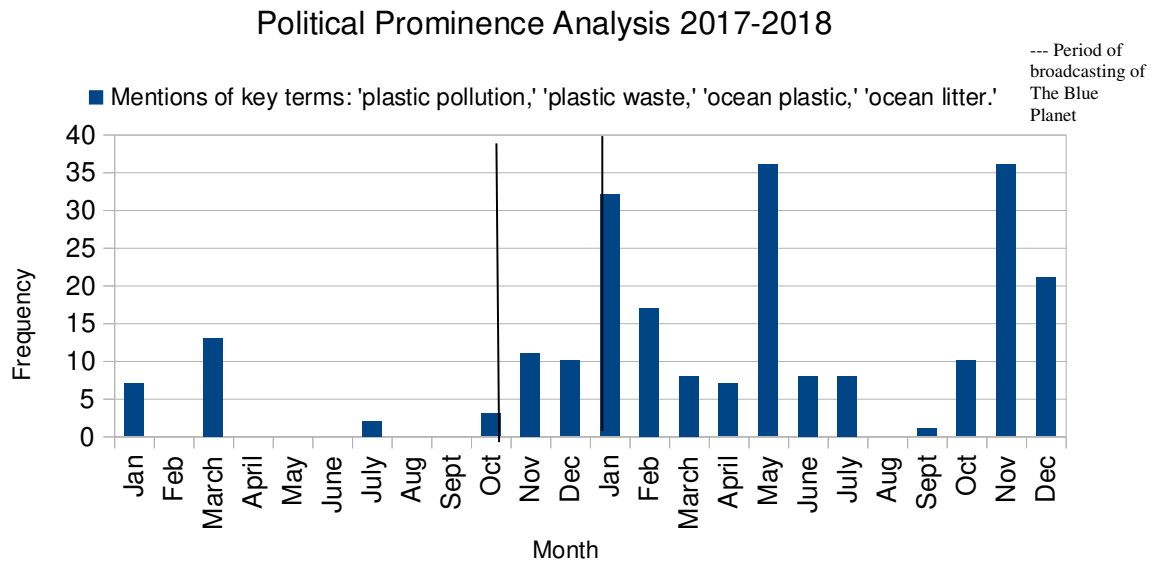


Figure 6: Number of speakers in parliament on the issue of plastic pollution (2017-2018).

In order to better understand what influenced politicians to discuss the issue of plastic pollution and test hypothesis 3, a quantitative content analysis of a total of 41 parliamentary debates was employed. Over the five-month period of analysis, MP's mentioned either *David Attenborough* or *The Blue Planet* during a total of 11 debates. The debates that centred predominately on the issue of plastic pollution, in general, had a higher frequency of

mentions. The most significant findings are from 18 December, 2017, where five out of six speakers from The House of Commons referred to *David Attenborough* or *The Blue Planet*. This debate (Draft Environmental Protection (Microbeads) (England) Regulations 2017), chaired by the Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs, Dr Thérèse Coffey, saw a significant number of speakers addressing the presenter or the documentary. In her opening speech, Dr Coffey (18/12/2017) stated how, “*Blue Planet II has shone a spotlight on our seas, and it is clear that they are in danger from many issues, including plastic waste. Plastic has become integral to our modern-day lifestyles, but millions of tonnes of plastic enter the global ocean every year, which is why we must take greater care and action to reduce if not eliminate pollution of our marine environment.*” Others claimed that a recent poll suggesting 85% of the public wanted to stop plastics polluting the seas, was likely to have been caused by the documentary (Holly Lynch, 18/12/ 2017), whilst mentioning *The Blue Planet* in such debates was, “*Almost obligatory,*” (Kerry McCarthy, 18/12/2017). These statements show the large extent to which the documentary impacted on political debates.

Almost all parliamentary debates (N=38) show a high level of commitment made by politicians from both major parties to tackle the problem of plastic pollution. A total of 84% (N=71) of speakers who mentioned the issue either suggested or stated that more needs to be done to combat plastic pollution. For instance, with Kerry McCarthy (Labour) (18/12/2017) stating: “*We put the tax on plastic bags and are introducing a ban on microbeads, but that is simply a drop in the ocean. We must go much further, much more quickly.*” There is evidence to suggest that the documentary also pushed the issue higher on the government agenda with more politicians striving for a political solution to the problem. One major commitment, and mentioned several times throughout the debates and by the media was the government's 25-year environment plan, which appears to have become part of one of the main commitments in tackling the problem of plastic pollution. The Guardian (3/03/2018) claimed that The Conservative party had previously used their commitment to the environment as a key campaigning strategy and were thus presented with what Kingdon (2003) labelled as a window of opportunity to gain public support after *The Blue Planet* was broadcast. The Conservative's motivation to take action on plastic waste in the environment, along with the identification of plastic pollution as a serious threat to marine life and efforts to tackle this issue, led to an opportunity to effect change. Here, the issue successfully got onto the political agenda as a result of an alignment of different policy 'streams' (Kingdon, 2003). The issue was identified as a problem by *The Blue Planet*, the media drew greater attention to the issue, addressing the need to combat plastic waste in the environment and many politicians displayed high levels of commitments to tackling the issue. In particular the 25-year environment plan illustrated serious commitments by the Conservative government. “*At the launch of the document the Government placed great emphasis on the need to clean up plastic from our environment. We all agree that a powerful case was made for this in the “Blue Planet” series*” (Baroness Jones of Whitchurch, 29/01/2018). Therefore, with the divergence of these streams, the opportunity to adopt policies was present and high on the political agenda.

Overall, the way politicians and the media discussed the issue of plastic pollution was highly similar. Both the newspapers (56% of articles) and politicians (56% of debates) were equally focused on discussing plastic in bodies of water, however, politicians (27%) were less likely to discuss the effects of plastic on marine life compared to the newspapers (44%). It is likely that politicians focused more on plastic in bodies of water as the effects of this can be seen all around the UK and their policies might have a more tangible effect. For instance, James

Heappey (14/11/2017) explained how he was, “*Struck by the incredible amount of plastic that had been washed up (on the beach). There were bottles, earbuds, drinking straws, packaging—all sorts.*” Politicians did not ignore the effects on marine life, but probably felt that they would have less (or a much slower) impact on solving these aspects of the problem. For the media, on the contrary, the detrimental effects of plastic on marine life are seen as crucial to sparking public interest in the issue. One spokeswoman (Local, Sue Lewis, cited by The Daily Mail, 3/01/2018), stated how scenes of whales choking on plastic and turtles strangled by plastic waste, put the issue of plastic pollution high in people's consciousness, which was claimed to be a 'light-bulb moment.' This seems to suggest that the public was affected by the powerful visuals of harm to animals, which influenced the media to focus more on the effects of plastic on marine life than politicians.

The results from both the prominence and content analysis are in line with the idea that politicians became much more interested in the issue of plastic pollution after *The Blue Planet* aired on British television, which continued throughout 2018. Although plastic pollution was already on the parliamentary agenda before the documentary was broadcast, the results indicate that the documentary sparked discussions around the issue, with many politicians claiming that it had generated interest in the need to protect our oceans and marine life from the impact of plastic pollution. Therefore, these results appear to be sufficient enough to confirm our third expectation (H3), that *The Blue Planet's* release led to an increase in political debates around plastic pollution.

If we sum up the results for the three agendas, there is ample evidence that *The Blue Planet* played an agenda-setting role. This becomes also clear by comparing the attention for plastic pollution between three different time intervals: the period before the start of documentary (1 January 2017 – 31 October 2017), the period during and right after the documentary was aired (1 November 2017 – 28 February 2018) and the period thereafter (1 March 2018 – 31 December 2018) (for a similar approach see Zerback et al., 2020). Table 1 shows that on all three agendas we find a significant (t-test) increase in attention from period 1 to period 2. For the public agenda the average monthly key word searches on plastic pollution jumps from 18 to almost 47 ($t(12)=-3.2$; $p=.045$), the media attention for the issue rises from 9 to 53 ($t(12)=-3.9$; $p=.027$), and the political attention in parliament increases from 2 to 17 ($t(12)=-4.0$; $p=.002$). Our conclusion that plastic pollution remains relatively high on each agenda is also confirmed, when we compare period 2 (during) and period 3 (after). On the public agenda the keyword searches on plastic pollution increases further, but the difference is not significant ($t(12)=-1.4$; $p=.17$). On the media agenda and the political agenda the attention for plastic pollution falls slightly, but again the difference in monthly attention between both periods is not significant (media $t(12)=1.3$; $p=.27$; political $t(12)=0.5$; $p=.59$). Although, we should interpret this rudimentary analysis with caution, as it is based on a limited number of months, the trend is quite straightforward.

Table 1: Average monthly attention for plastic pollution on three agendas

Period	Before (10 months)	During (4 months)	After (10 months)
Public agenda	18,4 ^a	46,9 ^b	61,3 ^b
Media agenda	9,4 ^c	53,5 ^d	38,4 ^d
Political agenda	2,5 ^e	17,5 ^f	13,5 ^f

Note: Figures with the same superscript within each agenda do not differ significantly on the .05 level (t-test). The table gives the frequency and average relative popularity of key terms, 'plastic pollution,' 'plastic waste,' 'ocean plastic' and 'ocean litter.' The frequency relates to the media agenda (total number of mentions of key terms in The Guardian and The Daily Mail articles) and political agenda (total number of mentions of key terms during parliamentary debates) with the public agenda showing the average relative popularity (of the key terms used in Google searches, out of 100).

Conclusion

The purpose of this research was to explore the powerful role documentaries can have in setting the agenda for the issues they advocate and to specifically investigate whether The BBC environmental documentary series, *The Blue Planet*, triggered agenda-setting effects for the issue of plastic pollution in the UK. The findings make clear that on all three agendas (public, media and political), plastic pollution became a salient issue in 2017 and once it was on the agenda, it remained salient throughout 2018. The results also suggest that *The Blue Planet* was influential in generating this rise in interest, lending to the idea that the documentary did set the agenda for plastic pollution and a confirmation of all three hypotheses. For the public agenda, the relative popularity of plastic-related Google search queries increased over time with the term 'ocean plastic' being an exceedingly popular search term on the dates of the only two episodes that addressed the issue of plastic in the ocean. For the media and parliamentary agendas, interest in plastic pollution increased dramatically since the documentary was broadcast, with a higher number of articles published and a greater number of politicians discussing the issue in parliament. Furthermore, both the media and politicians specifically addressed the issue of plastic in the ocean and other bodies of water as well as the effects of plastic pollution on marine life. Since *The Blue Planet* focused on plastic in the ocean, it appears to be likely that media and political interest specifically in this issue was a result of the documentary. Overall, these results are in line with previous studies on the potential agenda-setting role of documentaries (Vasi et. al., 2015; Nisbet and Aufderheide, 2011).

How can we explain this substantial agenda-setting influence? Although, this question is hard to answer and not the explicit goal of our study, we believe our research points to three potential explanations. First, the BBC documentary was watched by millions for its sea-life content, its spectacular images, and high quality commentary by the well-known and respected broadcaster, Sir David Attenborough. The BBC produced the environmental series to illustrate different aspects of marine life without the explicit goal of generating a vast amount of interest in plastic pollution. However, it came at a crucial moment when interest in the issue was already slowly increasing and appears to have triggered sudden widespread interest. The fact that the issue of plastic pollution as a societal problem was embedded in a broader popular program, has undoubtedly increased its audience. The unintentional, or at least non-political nature of the documentary, might have paradoxically strengthened its

impact on public opinion.

Second, the results also suggest that *The Blue Planet* not so much informed journalists and politicians about plastic pollution in the environment, but rather offered a window of opportunity for dealing with the issue. Politicians and media outlets that previously asked for (public) attention to this issue, had little or no effect. For instance, The Daily Mail had already launched its *Turn the Tide on Plastic* campaign in 2008, but received little response. Similarly, some politicians were advocating for government action, such as the banning of micro-beads in cosmetic products, which began in 2016. However, these actions were hardly discussed in the news until the end of 2017. Almost simultaneously, *The Blue Planet* was seen to trigger public, media and political interest in plastic pollution and appeared to create an opportunity to push for greater government action by those already advocating for change. Opinion polls showed overwhelming public support, the issue became an increasingly popular search topic on Google, and the media provided more coverage related to plastic waste and plastic pollution. Politicians addressed the issue more frequently during parliamentary debates and made commitments to tackle the issue. Most notably, the government's 25-year environment plan was at the fore-front of governmental proposals. Of course, the plan was not a direct consequence of the documentary, but the issue of plastic pollution was presented as a central aspect of the policy plan. Since this research did not focus on the implementation of actual policies by the UK government, further research is needed to study the actual policy measures to combat plastic pollution. Furthermore, some scholars suggest that the environmental focus of politicians on plastic pollution is a rather 'convenient' one. For instance, Stafford and Jones (2019:187) argue that, "Plastic pollution has been overemphasized by the media, governments and ultimately the public as the major threat to marine environments at the expense of climate change and biodiversity loss." Especially conservative politicians might favor a widely supported cause such as combatting plastic pollution, asking small changes in consumer behavior, instead of the more structural changes needed to fight climate change.

Third, and finally, *The Blue Planet* appears to have ignited a process of mutual influence between the public, media and political agendas. Probably many ordinary citizens, journalists and politicians were all directly influenced by the documentary with its stunning and even breath-taking images of marine life, but also emotional content of animals suffering the lethal consequences of 'our' plastic. Besides this direct effect, journalists and politicians also indirectly reacted to the public success and outcry following the documentary. Next, as we know from previous research, the media and political agendas influence each other in both ways. Politicians react in parliament to the more prominent issues in the news, while journalists in turn report on the political debates, in particular as these debates deal with issues that were previously in the news (e.g. Van Santen, Van Aelst, and Helfer, 2015). In this study we were not able to dismantle how this 'virtuous circle' of influence between the three agendas worked. This is clearly a limitation of our study that further research needs to address. Studying the causal dynamic between the different agendas could be done by adding a time-series or temporal pattern analysis that more systematically examines who influences whom (e.g. Maier, Bacherle, Adam, and Leidecker-Sandmann, 2019). However, these techniques (and agenda-setting research in general) support the assertion that temporal precedence signifies a form of causality, but often without actually proving that one agenda "caused" the other to react (Harder, et al., 2017). Therefore, in addition, interviews with journalists and politicians would give more insight into the importance of the documentary as an agenda-setting source. These interviews could also tell us more on why these actors perceived the documentary as influential or not. In addition, more research on the public agenda could add value to our study such as measuring the attention on social media

platforms in relation to *The Blue Planet* during the period of broadcasting. In closing, we hope our work will be used as a source of inspiration to further investigate how documentaries advocating important social problems are able to set the agenda for policy change.

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