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# **A Study on Climate Change Awareness of Media Persons in Kerala, India**

## **Authors**

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## **Abstract**

This study aimed to measure climate change awareness of media persons in Kerala and also investigated its nature of linkage with their respective personal & professional characteristics. To measure climate change awareness, the study uniquely designed a conceptual model which incorporated four knowledge scales as casual & basic knowledge, effect knowledge, action-related knowledge and agreement/event knowledge (knowledge scales proposed by Tobler, Visschers & Siegrist, 2012). Based on this a standardized survey instrument was developed and performed among 518 media persons in Kerala. The study adopted a multistage stratified random sampling method to identify the sample population. The collected data were subjected to statistical analysis using the independent T-Test and ANOVA, carried out to understand the relationship of climate change awareness with their personal and professional characteristics. For the study, personal characteristics constituted were age, gender, education, science education, type of science education and environmental organization membership. Professional characteristics were job designation, type of media, experience, media education, field of work, working region, climate change reporting and media awards. Results revealed that majority of the media persons (N= 325, 62.7%) had a moderate level of climate change awareness. Besides to that study results also showed that a few personal and professional characteristics had significant relationship with climate change awareness.

Key Words: ***Climate Change, Climate Change Awareness, Climate Change Knowledge Scale, Personal and Professional Characteristics***

## **Submission ID**

51

# Virtual Reality and Climate Change: A Qualitative Analysis of VR Media Productions on Oculus TV Using VR Head-Mounted Display

## Authors

Mr. Shravan Regret Iyer - Rutgers University

## Abstract

With rapid advancements in virtual reality (VR) technology, a wide range of VR hardware such as head-mounted displays (HMD) with haptic controllers, along with VR media productions compatible platforms such as Oculus TV, Netflix VR, YouTube VR are now available for users to make practical contact or experience with phenomena virtually. The user experience is not passive but can be interactive in such a virtual sphere due to VR's potential to offer multisensory engagement such as haptics (touch), gesture (hand, arms, head, or movement of other body parts), auditory interaction, and immersion, including 360 degrees of visual and auditory envelopment. Considering such immersive nature of VR, a growing body of literature highlights that VR first-person experiences could increase pro-environmental behavior and climate action among people. However, limited scholarly work has explored from a qualitative standpoint how and to what extent VR media productions on popular VR platforms utilize experiential media (EM) qualities, particularly on global issues such as climate change. The current study addresses the gap in the literature and explores VR uses in climate change storytelling. The study uses a mixed approach, i.e., qualitative content analysis, experiential media theoretical model, and the United Nation's intergovernmental panel on climate change (IPCC, 2018) special report's framework on the climate crisis. This study looks at nine different VR media productions on climate change available on Oculus TV, a VR application by *Meta Platforms Inc* (formerly *Facebook Inc*). The nine VR media productions observation and experience involved the use of Oculus Quest 2 HMD to understand: 1) to what extent do the VR media productions utilize six qualities of EM; 2) what themes do such VR media productions highlight pertaining to climate change, and 3) to what extent do such themes capture key points highlighted by the landmark IPCC 2018 special report's framework. The findings revealed that all the nine VR media production utilized limited qualities of EM, i.e., (1) *interactivity*, (2) *immersion*, (3) *multisensory presentation*, (4) *algorithm and data*, (5) *first-person perspective*, and (6) *natural user interface*. The findings also revealed five broad thematic categories, including global warming; biodiversity & endangered species; culture & traditions; conservation & disaster management; and agriculture, along with various sub-themes identified from all the nine VR media productions. The thematic analysis showed that the VR media productions utilized limited framing and contextualization of the issues pertaining to climate change — as opposed to the broad multidisciplinary approach that the IPCC report takes

and offers as a framework to help people understand the gravity of the problem caused by climate change. The study extends the theoretical understanding of the role VR plays in highlighting climate crisis and provides practical implications on the uses of VR for climate change storytelling and reporting.

**Keywords:** Virtual reality, climate change, experiential media, IPCC 2018, immersive environments

## **Submission ID**

57

# **Beijing Air Pollution: Framing and Frame Changing among Chinese and U.S. News Coverage before and during the COVID-19 Pandemic**

## **Authors**

Prof. Zhuxuan Yan - Florida State University

## **Abstract**

This exploratory study will focus on analyzes of media coverage of Beijing air pollution topics in Chinese and U.S. news from 2012 to 2021. China holds the record for the fastest developing country in the world, while the rapid economic growth brings several environmental issues to the country (China Highlights, 2017). The air pollution issue, in particular, brings harmful living surroundings to the capital city, Beijing. Since 2012's controversial event of "*China vs. Beijing U.S. Embassy*", which started a political debate over the air pollution measure of particulate matter of PM 10 or PM 2.5, the city's air pollution issue has received increasing attention from both domestic and U.S. media (Min & Zhen, 2010). Several studies found that Chinese and U.S. media covered the topic with different standpoints around 2012. For example, Chinese media covered the Beijing air pollution issue with mid self-criticism while the U.S. media covered with more negative complaints (Duan & Takahashi, 2016; Wang 2018). In 2020, when the COVID-19 pandemic began in Wuhan, China, the Chinese and U.S. media continued their coverage on the air pollution issue and paid much attention to the influence of the country's lockdown on its air pollution level.

However, limited studies have investigated the differences that Chinese domestic and U.S. media coverages the Beijing air pollution topic before and during the COVID-19 pandemic.

Additionally, it remains unseen how the pandemic would influence or change the way that Chinese and U.S. media report the Beijing air pollution issue. Comparing the news coverage on the air pollution topic before and during the pandemic is worth investigating given the controversial nature of the origin of the COVID-19 virus, which might change the way how domestic and U.S. media report the air pollution issue. Based on the theory of hierarchy influence, which suggests that media content is driven by political ideology and influenced by the social power and interests of the nation (Shoemaker & Reese, 2014), this study aims to investigate how Chinese and U.S. media frame the air pollution topics differently, and how the news frame changed from 2012 to 2021.

Specifically, the study intends to answer:

RQ1: What are the differences in regard to the news coverage topic during 2012-2021 in Chinese/U.S. media?

RQ2: What are the differences in regard to news' source use during 2012-2021 in Chinese/ U.S. media?

RQ3: What are the differences in regard to media's standpoint (positive vs. negative) on Beijing air pollution during 2012-2021 between Chinese and U.S. media.

In order to answer these research questions, the study will use content analysis method. Chinese news will be based on online news articles from two major newspaper companies in China: China Daily and Xinhua News. The analysis of U.S. media will be based on online news articles selected from CNN and the New York Times from the LexisNexis database. Searching keywords and codebook will be adopted from a previous study on Beijing air pollution news (Duan & Takahashi, 2016). All the news articles will be independently coded by two trained coders.

## **Submission ID**

103

# **Re-Framing Sustainability in a Pandemic Understanding Sustainability Attitudes, Behaviors, Visions and Responsibilities for a Post-Covid Future**

## **Authors**

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Dr. Robert Sposato - University of Klagenfurt

Ms. Stefanie Mertl - University of Klagenfurt

Dr. Renate Huebner - Klagenfurt

## **Abstract**

On April the 21<sup>st</sup>, 2020, at the first peek of the global pandemic, the *Guardian* started a video series asking for the “new normal” and what we want a future shaped by Covid-19 to look like? What are we concerned about? What are we hopeful for? What will the changed future look like – and which of the changes we made so far to our life(style) and behavior will remain? Since then, future institutes, thinkers, and researchers from various disciplines have described Covid-19 as a window of opportunity for sustainability transitions. Therefore, it seems to be only consequent to look at individuals and their visions for a post-Covid-Future and explore if sustainability is used to frame the future.

There is no doubt that the Covid-19 pandemic means much more than a health challenge and more than a potential economic catastrophe. It is the beginning of a social change process and a test for our civilization on how we deal with transformation. It is also time for asking for the moral principles that will guide transformation. Our response as society as a whole, as collectives and communities, as institutions and individuals will highlight our capability to deal with and manage cultural and social change in the future. Staying at home and away from travelling, consumption, and playgrounds have changed our behavior and lifestyle, with positive and negative effects. It also changed our attitudes from preferences to moral imperatives, from being driven by conventions and habits to moral convictions and new perceptions of our very individual responsibility in these societal transformation processes (Weder et al., 2021). During the first year of the pandemic, people did not only return to their local structures and developed a solidary “we-culture” (Zukunftsinstitut, 2020) and a new consumer sentiment (Kittel et al., 2020). Much more, organizations sketching the future picture the future as the opportunity for a new kind of globalization and climate change-related transformation (reduction of fossil fuels, less air and car travel, shift to a meatless diet, some form of basic income (Moriarty & Honnery, 2020; Goffman, 2020).

However, the question arises if those Covid-19 related changes in behavior and attitudes and newly developed moral imperatives are temporary, or if (at least some of them) will be the “new normal” in post-corona times? With the study at hand, we aimed at understanding people’s visions for a “new normal” and what role sustainability as a moral principle might play in this process of change and redefinition of “normal”.

Theoretically, we first conceptualize how sustainability is defined and a sustainable future possibly envisioned by organizations and individuals. Second, we introduce the concept of

*moral agency* to better understand how individuals perceive their responsibility when it comes to sustainable development and social transformation processes – or how much they allocate the responsibility to "others," mainly political institutions, "the government," but also corporates.

With empirical data from a quantitative survey with complementary qualitative elements (n = 264; 2020, Austria), we can not only show that people increasingly use sustainability as a principle to evaluate their behavior ("during the Corona-restrictions, I was much more sustainable because I didn't travel"). Much more, we can see that this is not necessarily related to the willingness or readiness to change and the commitment to keep the changed and more sustainable practices in the future (taking agency for the future, feeling responsible).

The insights gained from the survey show that people tend to use three narratives for the future, which are related to a certain degree of morality, the perception of being a change agent, and, therefore, the willingness to take responsibility as an individual: they range from rather fear- or concern-driven *resignation* (Type A), to guilt-driven *resilience* (Type B) and to an anger-driven, courageous *responsibility* (Type C). Limitations of the study and future research potential will be also presented and discussed at the conference.

## **Submission ID**

167

# **The Coast is Clear: News Media Framing of the Huntington Beach Oil Spill**

## **Authors**

Dr. Miriam Rahali - The London School of Economics

## **Abstract**

Both natural and man-made disasters pose threats to the well-being of humans, wildlife, and our shared environment. The public's perception of such crises is largely dependent on what information circulates in media discourses. The news media play a critical role in not only providing accurate information, but also delegating responsibility for solving the problems stemming from the crises. Motivated by the question that asks what the role of the news media is in the construction of a global public health community, this study aims to determine how the recent oil spill in Southern California was framed in news outlets. To

conduct this research, three newspapers were selected at the international (*The Independent*), national (*The Los Angeles Times*) and local (*The Daily Pilot*) level. More than 100 online news articles were gathered over a three-month period (October 2, 2021 to January 2, 2022), and a deductive approach – which predefines certain frames as content analytic variables – was taken to verify the extent to which these frames occurred in the news. To date, the crisis communication and journalism studies literature has identified five key frames that occur in the news: human interest, conflict, morality, economic and responsibility. In this paper, content analysis is further combined with thematic analysis in order to uncover patterns within the discourse and better define the parameters of the crisis. Taken together, the quantitative and qualitative data provide a fuller picture of the way the international, national, and local news outlets put the oil spill into context and perspective. However, it remains unclear as to whether the geographically (and temporally) bound oil spill news coverage is beneficial to communities and environments outside of Southern California in terms of improved preparedness and resilience. This research makes a contribution to the field by explicating the normative function of news media in the context of climate change and man-made disaster, and the broader impact that media framing of environmental crises has on society.

## **Submission ID**

236

# **The Fate of Bitumen: An Exploratory Study on National Media Coverage of Alberta's Bitumen Industry during the COVID-19 Pandemic**

## **Authors**

Dr. Sibbo Chen - Ryerson University

## **Abstract**

Despite growing public awareness of the urgency of climate action, policy discussions on when and how to achieve "net zero" emissions continue to be contentious in major fossil fuel-producing countries like Canada. Consider, for example, Canada's ambivalent stance on decarbonization during the 2021 United Nations Climate Change Conference (COP26). It joined the COP26 pledge to halt investment in coal power generation and phase out coal entirely by 2040. By comparison, its position on the fate of Alberta bitumen was noticeably ambiguous: Although Canadian Prime Minister Justin Trudeau announced at COP26 that

his government would impose a hard cap on emissions from the oil and gas sector in response to the global decarbonization challenge, he did not provide further details.

Zooming into Alberta, Canada's fossil fuel heartland, the provincial government insists on defending the bitumen industry against what it calls "environmental radicals." On October 21, 2021—less than two weeks before COP26—the Alberta government released the final report of its 2-year inquiry into "foreign funded anti-Alberta energy campaigns". Although the report found no wrongdoing of any groups or individuals. Alberta Energy Minister Sonya Savage still praised it as an important piece of history because: "Albertans should be outraged at the foreign-funded campaigns that targeted our oil and gas sector in an attempt to block development. Alberta's natural resources belong to Albertans, and decisions about their development should be made by Albertans."

Although pro-bitumen discourses like Savage's statement and the Trudeau government's stance on climate change appear to contradict each other at first glance, both sides are in fact variants of the climate delay rhetoric, which downplays or discounts the need for taking immediate and bold action. At the heart of the climate delay rhetoric is "climate change denialism 2.0", which seeks to obstruct the progress of phasing out fossil fuels in covert and less confrontational ways.

The ongoing public debates over bitumen subsidies and the future of Canada's oil-dependent economy provide a unique opportunity to investigate the relationship between climate change and storytelling in an era of post-truth politics. It is for this reason that this article presents an explorative study of major Canadian national newspapers' coverage of Alberta's bitumen sector in 2020. The empirical analysis is guided by two research questions: (1) How were bitumen subsidies framed in major Canadian national newspapers, and (2) what storylines about the future of Alberta bitumen emerged from their news stories? Using a combination of computational and manual coding, key news themes identified by the analysis suggest an alarming surge of climate delay discourses framing climate change as a secondary concern in comparison to the urgent need for economic recovery, which poses a significant threat to future climate change mitigation.

Given this finding, the study calls public attention to both opportunities and challenges created by the ongoing COVID-19 pandemic for grassroots resistance to climate change denial 2.0. On the one hand, reduced economic and social activities as a result of public health measures have led to significant reductions in both air pollutants and greenhouse gas (GHG) emissions, making the pandemic a potential tipping point for launching a planned decline of fossil fuels if an economic recovery prioritizing renewable energy infrastructure could be implemented. On the other hand, the continuing economic recession triggered by the pandemic has resulted in a deep political divide among the public in

Canada and other resource-dependent countries over whether to bailout the gravely stranded fossil fuel sector. To make post-pandemic recovery a transformative opportunity for humanity, more stories highlighting the potential of decarbonization are needed in the Canadian public sphere and elsewhere.

## **Submission ID**

313

# **Promote international common understanding of "community of life on earth"——taking the international communication of elephants in Yunnan as an example**

## **Authors**

Mr. ZEKUN YE - Shanghai Theatre Academy  
Department of Drama, Film and Television Literature

## **Abstract**

From the "community with a shared future for mankind" to the "community of all life on earth", China has continuously enrich and refined its focus, and put forward Chinese theories and Chinese solutions to deal with global crises such as biodiversity loss and climate change. For a long time, based on the disparity of communication strength between China and the West, the construction of discourse dominated by Western media, and the inherent values and production logic of different countries, groups and individuals, the concept that "community of all life on earth" faces many difficulties in international communication, such as the existence of incomplete Chinese role construction, unsatisfactory concept spread and concept interpretation. Around the incident of elephant going north in southwest China's Yunnan, Chinese mainstream media actively anticipated, seized the opportunity, continued to monitor international media coverage and comprehensively reported the incident, which caused the incident to detonate public opinion and attract attention at home and abroad, and also made it an excellent case for the international communication of the concept of "community of all life on earth". This case also provides useful experience for the international dissemination of this concept, that is, mining Chinese cases, telling vivid stories, observing international public opinion, mobilizing foreign media empathy, appealing to common values, and establishing a positive image of China as the main body of action. In the future, we hope that on the one hand, we can enrich the main image of China as an advocate and practitioner of "community of all life on earth" through

communication activities, and on the other hand, we can truly spread the core values of the concept in China's ecological protection story, and promote the world to resonate with the same frequency in ecological protection, to better promote ecologically sustainable development in biodiversity and other aspects.

### **Submission ID**

557

## **Visibilising the climate in the news on social policies: connections in the urban context**

### **Authors**

Dr. Joana Díaz-Pont - Autonomous University of Barcelona

### **Abstract**

The paper aims to identify whether the connections between climate action and social policies in the urban context are visible and, if so, in what areas and through what framings. Using a content analysis approach, it compares framings of the news on social policies in Barcelona over the course of a year. The results show that climate action is constructed discursively as an isolated issue, with its own logics and complexities, and with few references to other social policy areas. It also reveals that references to climate change in other social policy areas do not operate as framings. The paper claims that discursive strategies that separate climate change policy from other social policy areas can invisibilise the connections that operate between these policies, links that are key for pursuing the UN's Sustainable Development Goals, especially in the urban context.

### **Submission ID**

596

# **De la eclosión a la nueva normalidad. Evolución, adaptación y resonancia del marco Greta Thunberg entre 2018-2021.**

## **Authors**

Ms. Sílvia Díaz Pérez - Universitat Pompeu Fabra

## **Abstract**

En 2019 el movimiento climático dio un paso adelante sin precedentes en su capacidad de movilización e impacto político y mediático. Su éxito está muy vinculado a la figura de Greta Thunberg y su papel en el establecimiento de un nuevo frame o marco de acción colectiva (Thompson, 2020; Wahlström et al., 2019). Dicho marco, reforzado y legitimado con su propia historia personal, definió de forma exitosa el nosotros respecto a los otros, el problema, el agravio, la estrategia de actuación y los objetivos del movimiento climático (Díaz-Pérez et al., 2021).

Sin embargo, la irrupción del coronavirus forzó a Greta Thunberg a adaptar su discurso en un nuevo contexto de crisis sanitaria, en el cual la atención de los medios de comunicación fue copada por la pandemia y en la que las restricciones de movilidad impidieron la participación en protestas y huelgas offline (Sorce & Dumitrica, 2021).

Esta comunicación analiza la adaptación y evolución del frame de Thunberg a través del análisis de su discurso utilizado el marco metodológico del análisis mitológico-discursivo (Kelsey, 2017; 2020) sistematizando la relación del discurso de Greta con la construcción del arquetipo del monomito. Para ello se analizarán sus discursos públicos realizados en conferencias, movilizaciones o cumbres climáticas entre Agosto de 2018 y Diciembre de 2021. En segundo lugar, se analizará el engagement de los 1961 tweets que Greta Thunberg publicó en la red social Twitter en ese mismo periodo a través de la aplicación Twitter API v2, y su relación con las diferentes fases del storytelling y del frame de la activista.

Los resultados preliminares indican que el marco impulsado por Greta habría evolucionado sobre dos ejes distintos durante la pandemia: dando más visibilidad a activistas y luchas de países del Sur Global, tras un 2019 en el cual el 92% de la movilización de Fridays for Future se concentró en países del Norte Global (Fridays For Future – Strike Statistics: Countries, 2020), y enfatizando en la importancia de las conexiones sociales dentro del movimiento climático, en un contexto de aislamiento a causa de la pandemia (Korotkova, 2021).

## **Submission ID**

602

# **Images of Death, Destruction, and Decay: Necropower and the Visual Transformation of Puerto Rico into a Climate “Death-World”**

## **Authors**

Dr. Hanna Morris - Annenberg School for Communication, University of Pennsylvania

## **Abstract**

A recurrent focus for many studies of climate communication revolves around the question of how to engage people, inspire a sense of urgency, and thus motivate immediate action in response to the crisis. Some environmental communication scholars have noted the potential power of invoking interest and concern through the emotional appeal of sublime and sensational images of devastated landscapes (Peeples, 2011). Indeed, Peeples (2011, p. 374) notes how “individuals often attend to environmental problems not because they are the most dire, pressing, or dangerous, but because they are the most evocatively articulated.” Not all scholars, however, agree with this positive potential—no matter how “evocative” the images may be. Demos (2017), for instance, critiques the abstract and aerial aesthetics of Edward Burynsky’s photos that Peeples (2011) celebrates. Demos (2017, p. 65) contends that the beautification of ecological destruction wrought by the US fossil fuel industry displayed in Burynsky’s images “merges with nature, unified aesthetically, composing a picture that is, monstrously, not only visually pleasurable, but also ostensibly ethically just—an image of American ‘freedom’ whose historical progression, according to the familiar patriotic narrative, is necessary, inevitable, even—as pictured here—beautiful.” This argument echoes Nixon’s (2011, p. 11) critique of sensational images that effectively decontextualize the “slow violence” of climate change “whereby violence is decoupled from its original causes by the workings of time” through beautification, abstraction, and spectacle.

In his critique, Nixon (2011, p. 16) asks a crucial question: “Who counts as a witness?” and thus, what counts as “evidence” of climate change? Nixon (2011, p. 2) defines “slow violence” as “violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all.” The visible is consistently centered and remains important for accountability and legal / policy action to address complex crises such as climate change (Pezzullo, 2007), but visible evidence is often restricted to the immediate and temporally bound “event”—posing significant challenges for the slow violence of climate change that is “dispersed across time and space” (Nixon, 2011, p. 2).

In examining what images of climate crisis retain evidentiary value and which do not, Masco (2010) traces the formation of a visual culture of climate change in the US via the culturally familiar aesthetics of war, and in particular the atomic bomb. Nixon (2011) contends that these highly visible and spectacular “fast violence” images of climate change are selected by mainstream media outlets because they fit within established news values that attract eyeballs—especially important for a highly saturated digital media landscape. Masco (2010), however, adds an additional layer to this question of why “fast violence” images of the climate crisis are most prevalent across US media. Masco (2010) points out how images of the climate crisis as war are highly advantageous for the US national security state because they are leveraged as “evidence” of the threats of climate change imagined in a very particular way; namely, as a source of insecurity, conflict, and chaos positioned as threatening to the nation and its citizens. In turn, these images of climate insecurity legitimize and substantiate a militaristic—as opposed to a transnational and internationally cooperative—response. Despite this, little scholarly attention has been paid to how the journalistic imperative of “witnessing” and more specifically, “eyewitnessing” (Zelizer, 2007), is a crucial (and potentially limiting) factor shaping the visual repertoire of climate news images.

In this paper, I examine how news images of climate change are constructed via the aesthetics of war. I argue that the journalistic imperative to “witness” climate change is important to consider here. Indeed, news images of climate change are privileged for their “evidentiary value” according to a very strict set of visual criteria shaped by an established definition of what “violence” looks like. Through a multimodal critical discourse and visual analysis of news coverage of the aftermath of Hurricane María, I examine what constitutes visual “evidence” of climate change, why, and to what end in terms of the types of responses proposed. My study’s archive is drawn from cover stories that are dedicated specifically to the aftermath of Hurricane María across influential and politically and ideologically diverse US politics and news magazines. Ultimately, the results of my analysis reveal that Puerto Rico is demarcated as a “death-world” Mbembe (2019, 2003) across publications, effectively casting Puerto Rico as a purgatory island dependent on the help of the US as “savior.”

## **Submission ID**

608

# Comparing Media and Public Agenda on Crisis News: a Network Agenda Setting Perspective

## Authors

Ms. Zhiyue Song - School of Journalism and Communication, Tsinghua University

## Abstract

Internet communication technologies have given rise to a form of social media-based public sphere. Social media always serves as a potential information source and provides space for open discussion. On July 20, 2021, a train of Zhengzhou Metro Line 5 was flooded due to continuous heavy rain hitting Henan Province, China and 14 people were killed in this accident. This crisis news attracted extensive attention and aroused heated discussion among the public on Chinese social media platforms.

Previous studies have indicated that news media always transfers the salience of objects and attitudes to public agenda during the information spreading process. However, the boom of Internet and social media has changed information dissemination formation and people's cognitive structure, which challenges traditional agenda setting theory and promotes the development of the network agenda-setting (NAS) model. Using the Zhengzhou Metro Line 5 accident as a case study, this research compares the networked attribute agendas of media coverage and public discussion on Weibo, one of the most popular Chinese social media platforms, and examines the agenda setting effects between news media and the public.

This research used content analysis to construct the agendas of media coverage and public discussion on Weibo. All the Weibo posts including "Zhengzhou Metro Line 5" and released between July 21, 2021 and August 4, 2021 (N=10,013) were collected. 210 posts released by news media and 238 posts released by the public were randomly selected. Based on preliminary analysis, 13 attributes of this crisis case discussed in Weibo posts were defined, including casualty, rescue, social impact, cause, accountability, etc. After coding all the samples, the degree of centrality for each attribute was calculated and compared between media and public agenda. R was used to construct and visualize the networked attribute agendas of news media and the public.

Media coverage and public discussion were found to focus on different aspects of this crisis case. The result of the QAP correlation test showed that the networked attribute agendas of the public had no significant correlation with media agendas. It suggested that Chinese media failed to lead the discussion on Weibo platform about the crisis news of Zhengzhou Metro Line 5. China's media system determines that Chinese news media is always considered as a "mouthpiece" of the country. Counter to news media which is

controlled or restricted, the information environment on social media is comparatively free, presenting highly emotional characteristics. Therefore, public opinion is less likely to be guided by news coverage which is mostly calm and objective in moments of crisis.

This research may serve as a point for discussion on whether the agenda setting function of news media still exists in the era of social media. It provides a groundwork for future research to apply the NAS model to further examine the agenda setting effects within the context of China's media landscape in an empirical way.

## **Submission ID**

659

# **Mapping environment-focussed social media, audio-visual media and art, in Sweden: cases, voices and positions**

## **Authors**

Dr. Vaia Doudaki - Department of media studies, ICSJ, FSS, Charles University

Prof. Nico Carpentier - Charles University

## **Abstract**

While in-depth research focusing on specific cases or areas of environmental communication is prolific, research that presents the overview, and especially research that captures the entire population of an area or societal field, is scarce (Authors, forthcoming). This article presents the main findings of a mapping research project, that mapped the populations of environment-focussed social media (Facebook groups, blogs, YouTube channels), audio-visual media (documentaries, television series/serials) and art (art projects and exhibitions), in Sweden, over a period of one year.

This project is relevant in the Swedish context, as Sweden is a country that is considered environmentally conscious, implementing environment-responsible policies. Still, environmental issues seem to be connected to polarising tendencies (which in their turn are intersecting with political-ideological and economic tensions), in a country that is known for its consensual culture. These tendencies on the one hand advocate for stricter environmental policies, and on the other express increasing environmental scepticism (Kunelius & Roosvall, 2021; Vowles & Hultman, 2021).

This mapping project is embedded in the field of environmental communication aiming to get a broad perspective of the fields it explores, by studying what is being communicated, by whom, and where, as it concerns the environmental issues in Sweden, but also, to address who produces knowledge around these issues and debates. The focus on the three main fields reflects the position that knowledge about the environment is produced in diverse fields, institutionalised or not, and despite academia's privileged position, academia is not the exclusive field of knowledge production (Authors, 2021).

The research identified the considerable number of 502 units that primarily or exclusively address environmental issues, across the three main fields. Apart from registering their main characteristics (age, size, reach, producers, communication channels, etc.), the mapping project captured also their embeddedness in societal spheres, and the topics, issues, ideas and positions, that these units communicate, about the environment. In addition to the multitude of units, across the three fields, the research identified also a multitude of voices addressing environmental issues through these fields. These channels and voices give visibility to diverse topics, issues and perspectives about the environment and human-nature relations. At the same time, in the majority of the mapped cases there is a clear alignment with ecocentric positions that contest the hegemony of anthropocentrism, and argue for structural changes promoting environmental protection and the rebalancing of human-nature relations (see, e.g., Corbett, 2006; Dryzek, 2013; Kopnina, 2013).

What is noteworthy, is that a mainstreaming, let alone, a hegemonisation of ecocentrism is not reflected in other societal fields in Sweden today. Legislation, the economy, and the positions articulated by political parties align, even sometimes carefully, with anthropocentric visions of socio-economic organisation and development, engineered through the hegemonic model of capitalist organisation. This relates to the difficulty faced by environmental non-institutionalised voices, albeit strong and hegemonic in their field, to expand their hegemony in other fields, and especially to get translated into regulation and policy.

## **Submission ID**

675

# **'In It for the Money, Not the Science'?: Problems and Potentials of Stormchasing Media**

## **Authors**

Dr. Melissa Beattie - American University of Armenia

## **Abstract**

Stormchasing refers to the practice of following storm systems and storms in progress over land. Though a critical part of research into meteorology for decades by providing on the ground data for comparison with remote radar, satellite and/or other mechanised sources, stormchasing has more recently become part of both the journalistic and digital media landscape. Despite its importance, however, stormchasing media has not been studied as either a media form and industry in its own right or in regards to reception by its audience. Through audience research contextualised by both text and industrial context, this paper will begin to redress this absence.

Since at least the 1990s, some local stations in tornado-prone areas of the United States have had a small number of stormchasers employed to provide real-time information about the movements and other changes of storms to help national and local weather offices as well as individuals to understand current and imminent threats to life and property. Stormchasing media has exploded into a multiplicity of forms thanks to the growth of the 24/7 news cycle, cable channels like the Weather Channel and digital media which allows for chasers anywhere in the world to broadcast live or immediately after the fact from and about tropical cyclones, wildfires and other weather-related dangers on a variety of platforms. As the vast majority of chasers are based in the US (as are my respondents) this paper will primarily focus upon that region. The theory developed through this study, however, can then be applied more widely.

The transnational and generally accessible (though digital inequalities of course impact this) aspects of stormchasing media, coupled with its historical use as an aid to both meteorology and broadcast journalism would seem to imply that such media would have the potential to greatly improve weather and disaster communication. Such a supposition is problematic, however, with regard to its audience's often negative perspectives of stormchasing and its increasing lack of trust in journalism (broadcast or digital). As such, stormchasing media shall be contextualised within the wider scope of lack of trust in institutions and the perception that stormchasers are motivated by thrill-seeking and/or monetary concerns rather than by science or the public good. Ultimately, this paper will develop a foundation for further study of this potentially useful yet poorly studied media form.

## **Keywords**

Stormchasing, digital media, audience research, disaster communication, science communication

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## **Submission ID**

783

# **Storytelling in a crisis narrative. How the COVID-19 pandemic created new opportunities for effective global environmental crisis communication**

## **Authors**

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Dr. Franzisca Weder - The University of Queensland

## **Abstract**

### Rationale

While environmental experts recognise we are living through an unprecedented environmental crisis, sluggish reaction from governments and societies around the globe show their advice is not being headed. However, the COVID-19 pandemic has shown how quick reactions and evidence-based decisions from Government can create rapid change if there is the will to do so. This raises the question, if experts have advised for action on both global crises, why have states taken extreme measures for COVID-19 but not the climate crisis? (van der Ven, 2021, pp. 13)

This paper examines how the role of *storytellers in a crisis narrative* dramatically changed during the pandemic – particularly how Governments and other organisations used

“COVID-19 science communicators as media stars” (Metcalf, et al, 2021, p. 12). With (n = 25) semi-structured interviews with various storytellers and “experts” in Australia, New Zealand and the Pacific, we aim to understand how “expertise”, “authority”, “influence” and possibly “public advocacy” is created in crisis communication, and how much journalism and communication practice has changed. We intend for learnings from COVID-19-communication to be better understood, defined and developed into a novel framework for improved environmental communication. For example, this may include strategically linking environmental health and personal health to motivate behavioural change (Petrovic, 2014) as many people see the COVID-19 pandemic as a current personal risk versus climate change as a future societal risk, despite respondents citing climate change as a larger overall risk (Geiger, 2021).

### Theoretical background

This project takes a new research approach to explore novel frameworks and related typology of “public advocates” to better understand how “expert” storytellers succeeded in driving public discourses during a global crisis. We will explore frameworks and develop a novel typology of “public advocates” through the exploration of concepts like authority (Perkins et al., 2021), agency, reputation, trust (Goldfinch et al., 2021) and expertise (Bucchi, 1996) in a pandemic-affected world. Here, the study expands existing frameworks and research in environmental communication which only rarely focuses on key communicators, experts, peers and “drivers” of crisis discourses and the agency they hold (Buxton et al., 2021; Faehnrich et al., 2020). The typology helps to inform the empirical analysis of how crisis storytellers have changed public communication and how the learnings from COVID-19 communication can be applied to new and effective narratives to engender responses to the global environmental crisis.

### Methodology / Study

As an initial part of this research, we are currently conducting n = 25 semi-structured interviews with communications professionals, key public communicators, science communicators, campaigners, activists, political communicators, and journalists. These interviews take place between January and April 2022, with pre-identified public communicators based in Australia, New Zealand, and the Pacific. These interviews will gain insights into their changing roles and seek to understand how, for example, journalists choose experts and represent scientific information and how that has changed since the start of the pandemic. It will also explore how their associations have changed in relation to key research themes like ‘expertise’, ‘authority’, and ‘influence’ since professionally communicating COVID-19. Following a Grounded Theory approach, these interviews will be analysed, coded, and sampled into thematic categories that appear and re-appear between these communicators. This will also help create new theories of changing professional practice in a pandemic/crisis and more broadly the foundation of this research project.

## Outcome / Output

As complexity and volumes of information increase in ongoing global crises it is more important than ever to understand how expertise is constructed in the news media and, thus, in public discourses. This has been flagged by scholars as an area of urgent examination (Peters, n.d.). The research at hand addresses the gap in research of new, emerging communicators (Weder & Weaver, 2022), considering an information paradigm shift to public advocacy and storytelling created by public communication and news media during the global pandemic. With this project we complement the body of knowledge at the intersections of science, health and environmental communication and create connections between existing concepts and new approaches in those research fields.

## Submission ID

788

# Issues, Attitudes and Potentials: Sino-US Crosstalk on Global Environmental Governance from COP15 to COP26

## Authors

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## Abstract

As environmental governance gained its significance among all the global governance issues, both China and U.S., the two major powers of the globe, have tried to compete and co-operate over environmental governance affairs such as climate change, biodiversity, pollution and other major concerns. Since Convention on Biological Diversity (CBD) COP15 and United Nations Framework Convention on Climate Change (UNFCCC) COP26 were thought to be two vital events for environmental governance, a content analysis based on official pressing data released by the U.S. and China during the two conferences has been conducted. In total, 162,029 words of news pressing from White House Briefing Room and 61,860 characters of news pressing from Chinese Ministry of Foreign Affairs (MOFA) have been collected by researcher, suggesting that the two countries' official discourses have showed significantly different ( $\chi^2_{(4)}=14.105>13.277, p<.01$ ) focuses on the sub-issues of environmental governance, though *Climate Change* cored in both discourses. Among the five sub-issue categories developed in accordance to grounding theory: *Climate Change*, *Nuclear Pollution*, *Biodiversity*, *Clean Technology Development* and *Others*, China showed its special interests into *Nuclear Pollution* and *Biodiversity* and U.S.

kept its eyes on *Clean Technology Development* and general rhetoric of environmental protection. The results could be possibly explained by the present geo-political global concerns of the two countries and the real urgent situation of global environmental governance. And in spite of the disputes, potential opportunities for co-operation could still be predicted between the two parties of global governance in the fields of *Climate Change*, *Technology* and *Biodiversity* since U.S. has not joined into the Convention on Biological Diversity yet and technological communication could play an energetic role for a continuous battle against environmental issues though present obstacles have been existing, for the fulfilment of which, potential conflicts risen from traditional geo-political issues, such as political attitudes towards the potential nuclear pollution caused by Japan, the ally of the U.S. and mutual accusations on the lagging of actions, shall deserve a careful handling.

## **Submission ID**

811

# **Voluntary or Compulsory ? The behavioral mechanisms of scientists' public engagement with science**

## **Authors**

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Mr. Huajing Gong - University of Shanghai for Science and Technology

## **Abstract**

Scientists' public engagement with science is significant to national development and society progress. However, the current situation of scientists' participation is far from sufficient to meet the needs of the society. At the same time, many scientists hold positive attitudes toward participate in science communication activities whereas show no substantive participation, so there is a discrepancy between scientists' attitude and behavior on this issue. Based on the self-determination theory (SDT) and the theory of planned behavior (TPB), this research explored the factors and discussed the behavioral mechanisms of scientists' participation in science communication by survey, multivariate linear regression and structural equation modeling.

As the data and results of multivariate linear regression model demonstrate that scientists' willingness, motivation and activities vary in different media, nonetheless they prefer to engage in non-traditional media activities in general. In structural equation models, without the stimulus of motivation, the actual behavior could not be realized, and this might be the explanation of the discrepancy between scientists' attitude and behavior. Motivations are divided into the types of autonomous, controlled and lack of motivation based on SDT, and each type of motivation affects engagement behavior differently. The controlled motivations have negative impact on engagement attitude and willingness which are related to behavior, while lack of motivation has negative effect on engagement behavior directly. Therefore, scientists should have their goals in science communication activities and proceed strategically.

It is noteworthy that efficacy is significant in the motivation-attitude- behavior model. It directly affects the feature of the model, the other factors listed in the model, as well as the scientists' willingness and actual behavior. Therefore, efficacy should be the primary factor which affects scientists' engagement. Other factors like scientists' attitude, sensitivity of time and energy input, subjective norms, some demographic characteristics and the attitude of government policies also have effects on scientists' engagement willingness and behavior. In general, scientists probably need a chance (maybe compulsory) to participate in science communication activities and realize their efficacy, then enjoy the activities sustainably by autonomous motivations.

## **Submission ID**

836

# **Specter Haunting the Globe: Sustainable Media for a Sustainable Environment; Iranian Experts Perspective the Conceptual Framework of Sustainable Media**

## **Authors**

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## Abstract

Contemporary societies are faced by a new specter haunting the globe – the changing of the world's climate. The evidence is drawn that climate change is not a purely scientific problem and human actions are central to this apparent warming of the planet. Therefore, individuals play a crucial role in combating climate change. High levels of acknowledgment and engagement are needed to lead changes toward more sustainable behaviors. Although media plays an important role in shaping individuals' awareness about climate change, the literature review has illustrated that there are various gaps in media coverage of climate change in Iran and they are not able to engage with all aspects of this phenomenon. Therefore, this study aims to develop a conceptual framework of sustainable media for the environment and its issues. However, as the uncertainty and ambiguity of factors that influence the implementation of sustainable media, it is urgent to explore and reveal the antecedents and functional mechanisms of its effectiveness. This study adopts the grounded theory method to clarify the point of view of Iranian experts (involving environmental, social, media, and communication experts, as well as academics) about the necessity of sustainable media and reveal different features that this media should include. The data collection tool for this qualitative study was a semi-structured interview. To analyze the data, Strauss and Corbin systematic method was performed with open coding, axial coding, and selective coding. The 20 in-depth interview data are coded and analyzed with the help of MAXQDA2020 software and the results demonstrated that media requirements, social demands, and environmental requirements are the casual conditions that prove the necessity of the existence of sustainable media. The findings showed that the legal and governmental aspects, media and communication aspects, social-cultural aspects, and globalization ties are context conditions that influence on shaping strategies. Moreover, according to the study, the framework of strategies of this media could be influenced by intervening conditions that they are the management and organizational factors related to the media organization, factors related to the human activists, environmental factors, as well as legal and political factors. In addition, the strategies that lead the media to sustainability are clarified as media independence and transparency, audience-oriented approach, focusing on media's agenda-setting role, media discourse, and human resource empowerment. Consequently, sustainable media with engaging these strategies can provide restoration and reconstruction, facing and coping, sustainable prevention, and forecasting to the communities and the environment.

**Keywords:** Climate Change, Communication, Environment, Media Coverage, Sustainable Media

## Submission ID

871

# **Framing Nuclear Energy in the Context of Climate Change: A Cross-National Comparative Content Analysis of Newspaper Coverage in China, France, India, Pakistan, and the United Kingdom**

## **Authors**

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Dr. Knut De Swert - Amsterdam School of Communication Research (ASCoR), University of Amsterdam

## **Abstract**

The debate over nuclear energy has been increasingly prominent on the political, societal, and academic agenda since the 2011 Fukushima Daiichi Accident. On the one hand, nuclear energy is deemed to play a role in mitigating climate change considering its zero-carbon emissions (Ho & Kristiansen, 2019). On the other hand, there have been considerable public concerns about environmental and physical risks of nuclear energy (Kristiansen, 2017).

Much research was conducted to examine news coverage of the Fukushima Accident (e.g., Arlt & Wolling, 2016; Du & Han, 2020). Nevertheless, only a few recent studies investigated news coverage of nuclear energy in the context of climate change (e.g., Devitt et al., 2019; Mercado-Sáez et al., 2019; Vossen, 2020). Besides, most of previous empirical works were single-country case studies (e.g., Boumans et al., 2016; Perko et al., 2012), whilst the rest of cross-national research was largely western/European-focused (e.g., Burscher et al., 2016; Perko et al., 2019). Only a limited number of studies addressed the East-West comparisons, but with a particular focus on democratic countries (e.g., Imtihan & Mariko, 2013; Mazahir et al., 2019). In sum, there is a clear dearth of comparative empirical research on media portrayals of nuclear energy between democratic and non-democratic countries.

This study zooms in the context of climate change and employs a manual quantitative content analysis to investigate how international relations, media tone, actors, and issue-specific frames were present in news coverage of nuclear energy across China, France, India, Pakistan, and the United Kingdom, and to further explore why the presence of various aspects differed at the country level (i.e., political system: democratic vs. non-democratic; geographical distinction: west vs. east) and at the newspaper level (i.e., left-leaning vs. right-leaning). Specifically, one left-leaning and one right-leaning newspapers were selected for

democratic countries. Due to China's one-party political system, the *People's Daily* and the *South China Morning Post* were chosen in light of different ownership types. All news articles were collected from NexisUni Database and the official database of the *People's Daily*. After removing duplicate and irrelevant articles, 939 articles remained for the final analysis. The sampling period (2014-2019) was limited by the availability of full-text articles in databases. Both descriptive and inferential analyses were performed to analyze the data.

In terms of theoretical relevance, this study (a) expands the research scope beyond western countries and provides empirical evidence on the effects of political system and geographical distinctions (macro-level), as well as political leanings of media organizations (meso-level) on news coverage of nuclear energy in light of the Hierarchy-of-Influences Model (Reese & Shoemaker, 2016); (b) contributes to existing nuclear energy research by extending the theory of Instrumental Actualization (Kepplinger & Lemke, 2016) and identifying new issue-specific frames of nuclear energy in the context of climate change. Regarding societal implications, policy makers could gain insights into journalistic framing practices and have a better understanding of the prominence of diverse voices in the mediated debate over nuclear energy. Thus, they may strategically use the media as a tool to communicate energy policies.

## **Submission ID**

958

# **The Impact of Smart Phones to E- waste as Cameras**

## **Authors**

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## **Abstract**

Technological developments regarding the features of smartphones lead to a day-by-day growth in demand and consumption of them. As a result, many smartphones become dysfunctional ahead of their optimum consumption period, which constitutes the main part of the e-waste amount. According to Global E-waste Monitor 2020, global electronic waste generation reached 53.6 million tons in 2019. By 2030, this figure is expected to increase to 74 million tons. Specifically, communication technology is the main amount of the e-waste generation worldwide. This is an indication that information and communication technologies cause environmental destruction. Thus, this research investigates the effect

of smartphones' camera features on the increasing amounts of e-waste. In this context, the focus of the research is the consumption of smartphones for improved camera features. In this way, the study will be beneficial to Communication Sciences in the context of theoretical contribution.

The study examines the growing e-waste generation through user experience focusing on taking photos with smartphones in daily life. The research takes place within communication sciences. Thus, while conceptual framework is set, it benefitted from the communication literature on e-waste. For this reason, "Zombie Media" and "Media Materialism" concepts are used in the research. In addition, interdisciplinary "Planned Obsolescence" and "Anthropocene" concepts were also used. Jussi Parikka refer to e-waste by featuring material dimension of media. He draws attention to the use of mines and plastics in production of media devices and points out the leak of poisonous chemical materials to soil after the devices are rubbish. According to Parikka and Hertz, media is never dead. Material structure of the media (hardware) either lives residual in the ground or transforms into part of an artwork. Even if Parikka emphasizes material dimension of media, popular understanding is about invisible structure of the media. Especially the "virtual" perception that emerged with internet caused the material/hardware structure of communication technologies to be perceived as virtual. This invisibility is a major obstacle to our perception of the environmental harm done by communication technologies. On the other hand, "Planned Obsolescence" is the basis of the significant increase in e-waste. This concept which was presented as a solution to revive the economy during the great depression, promotes encouraging new consumption and make consumer goods obsolete even though they do not expire. This solution is part of the consumption ideology of perpetual profit-oriented capitalism. Therefore, with planned obsolescence, which is an invention of the Anthropocene age, the natural cycle of the world continues to be manipulated by the hand of the men. This research will be implemented within this conceptual framework.

In the research, in-depth interview and diary methods are used. In the interviews, the participants were asked about their opinions on smartphone consumption, hence photography consumption and production. Detailed information was obtained about the zombie media existing in their homes. In order to ensure the reliability of the interview data, diary method was used.

The study has an authentic structure because the discussion takes place within the contexts of environment, communication and climate crisis. In addition, it is compatible with the "smart technologies and everyday life" theme within the IAMCR ESR working group.

## **Submission ID**

1017

# News Media Coverage of COP26: A Comparative Analysis of Newspapers in Bangladesh, Eswatini and Zimbabwe

## Authors

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## Abstract

Climate change remains a planetary threat, with severe impacts already affecting more vulnerable communities. The Intergovernmental Panel on Climate Change (IPCC)'s sixth assessment report of 2021 noted that planetary warming remained on an upward trend and warned that the world was likely to miss the Paris Agreement long-term goal of preventing temperature increases beyond 1.5o Celsius. To avoid a catastrophic warming point, the world needs to reduce emissions and develop supportive strategies for communities to cope with present climate shocks. These processes should lead towards a socially, environmentally, and economically just society. To achieve these goals, countries gather each year at the conference of parties (COP) meetings and make decisions on climate action. The news media, as the fourth estate, have a duty to cover these COP events and report on how world leaders plan to address the problem. How the media constructs the issues discussed has the potential to inform policies and people's actions towards the environment. The views popularised and legitimised in the news media can form part of mainstream discourse and in the end, become commonsensical and hegemonic at the exclusion of alternatives. Several studies have shown that while research on media coverage of climate change has increased, the research has mostly focused on the media in the global North. This study contributes to the literature available on how newspapers (*Financial Express*, *Eswatini Observer* and *The Herald*) in three global South countries (Bangladesh, Eswatini and Zimbabwe) have covered and represented climate change, specifically using COP26 as the focus of the study. The selected newspapers, have wider coverage in their respective countries, have more influence on climate change policymaking, global posturing, perceptions, and attitudes. The study uses a mixed-methods Concurrent Triangulation Design (QUAL↔QUANT) where quantitative content analysis is used to understand issue coverage while discourse analysis is used to understand how issues of climate action, emissions reduction, and financing responsibility are constructed. At a theoretical level, the paper applies discourse analysis and articulation to understand the ideological embeddedness of news coverage and how the worldviews of the social, political,

economic and media discourse actors are legitimised, normalised, and presented as common-sense. Discourse analysis and articulation allow for the explication of aspects of power and ideology in news production. Preliminary analysis shows that all the newspapers concur that climate change is a problem predominantly produced by the global North countries and pin the responsibility for addressing the problem at the hands of global North countries. The construction of the global North as owing the global South allows for what politicians and newspapers call the creation of a 'development space' that allows countries in the global South to catch up. The findings show that newspapers reproduced a science and techno/neoliberal discourse that showed optimism in the ability of 'clean' and 'renewable' technologies in emissions reduction. Discourses of environmental activism were also prioritized by these media to solidify the climate agenda before their national audiences.

## **Submission ID**

1108

# **Reducing the use of disposable plastics through public engagement campaigns: An experimental study of the effectiveness of different types of message appeals, modalities, and sources**

## **Authors**

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Dr. Juma Kasadha - City University of Hong Kong

Mr. Chun Hong Tse - The Chinese University of Hong Kong

Dr. Jing Liu - Hong Kong Baptist University

## **Abstract**

Using a representative survey with an embedded experiment among 1001 Hong Kong residents, this study aims to provide empirically derived strategies for effective public engagement campaigns to reduce plastic pollution. Specifically, this study employed a 2 (frame: gain vs. loss) \* 3 (modality: text vs. image vs. infographic) \* 2 (source: government vs. NGO) experimental design to (1) assess the attitudes, knowledge, and past behaviours of

Hong Kong residents regarding the environmental impact of single-use plastics, and identify distinct segments that can be targeted by public campaigns; (2) analyze media use habits of Hong Kong residents and determine effective ways of reaching the above segments of Hong Kong residents with pro-environmental messages; and (3) examine the effectiveness of different types of message frames (gain vs. loss), media modalities (text vs. image vs. infographic), and information sources (government vs. NGO) in reducing the use of disposable plastics and encouraging re-use and recycling.

A series of analysis of variance (ANOVA) tests were conducted to determine the effect of message frames, modality, and information source on behavioral intentions. The results indicated that participants exposed to messages with loss frames ( $M = 5.14$ ,  $SD = .897$ ) and those exposed to gain frames ( $M = 5.01$ ,  $SD = .950$ ) reported higher intentions than control group ( $M = 4.89$ ,  $SD = .923$ ;  $F(2, 998) = 3.91$ ,  $p < .05$ ). Meanwhile, compared with image-based messages ( $M = 4.96$ ,  $SD = .895$ ), text-based ( $M = 5.15$ ,  $SD = .930$ ) and infographic-based messages ( $M = 5.13$ ,  $SD = .926$ ) were more effective in increasing people's intention to reduce single-use plastics use ( $F(2, 917) = 3.91$ ,  $p < .05$ ). Information source, however, did not show significant difference in affecting people's intentions ( $M_{gov} = 5.11$ ,  $SD_{gov} = .886$ ;  $M_{NGO} = 5.05$ ,  $SD_{NGO} = .963$ ;  $t = 1.03$ ,  $p > .05$ ).

Based on respondents' environmental concerns and their disposable plastics use habits, the data were then subjected to a cluster analysis to produce three distinctive segments of the population, the passive cluster ( $n = 375$ ,  $M_{concern} = 4.97$ ,  $M_{habit} = 4.40$ ), the moderate cluster ( $n = 403$ ,  $M_{concern} = 5.27$ ,  $M_{habit} = 3.10$ ), and the concerned cluster ( $n = 223$ ,  $M_{concern} = 5.57$ ,  $M_{habit} = 1.99$ ). To gain further insights regarding the campaign strategies aimed at the passive cluster, a series of analysis of variance (ANOVA) tests were conducted and the results indicated that compared with the control group, both loss frame and gain frame were more effective in persuading the passive cluster to refrain from using single-use plastics. Meanwhile, text-based and infographic-based messages were more effective than image-based messages. Information source did not show significant difference in affecting behavioral intentions of the passive cluster. It also demonstrated that compared with the control group, the loss frame would be mostly effective for passive group when it was conveyed by text with NGO source ( $B = .376$ ,  $SE = .185$ ,  $p < .05$ ), while the gain frame is most persuasive when paired with infographics and NGO source ( $B = .501$ ,  $SE = .243$ ,  $p < .05$ ).

## Submission ID

1192

# Tracing Actors and Agency and Unmasking the Black Box in Climate Change Communication Networks on Chinese Social Media

## Authors

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## Abstract

Social media provides a new and expanding forum to discuss climate change. However, in previous studies (e.g., Williams et al., 2015; Olteanu et al., 2015; Anderson, 2017), the technical characteristics of social media itself have received little attention in relation to climate change communication networks. Actor Network Theory (ANT) is a powerful tool for interpreting the social order based on the interactive networks between human agents, technologies, and objects in climate change communication networks, which provide a new perspective on social media study. As Couldry (2008:93) observed, ANT “seems perfectly placed to generate a theory of the role(s) of media and communication technologies in contemporary societies”.

To address this gap in the literature, this article combines computational big data analytics with a mixed approach to a case study. The case selected is the 2021 Henan flood that forced climate change discourse to appear frequently on the Chinese social media platform Weibo. Drawing inspiration from ANT, this study investigated the actors (human and nonhuman), and the agency of the climate change communication network to demonstrate how Weibo’s particular technological features, self-censorship, and users’ cultures become entangled.

Between 14 July and 1 August 2021, Weibo data (N= 687,391) were collected through hashtags and keywords (#climate change and #global warming), via a web-scraping crawler from Weibo, comprising 5,997 posts, 326,407 reposts, 40,210 comments and 314,777 likes. After cleaning the raw data, PageRank values were calculated to aid in data visualization. Presented using the OpenOrd module of Gephi, this study has identified three main findings: 1) Sorting by PageRank values, the influential actors (users) identified on Weibo fall into the following categories: media, influencers, state institutions and local governments, NGOs, scholars, public intellectuals, industries, and lay people. In addition, the technical characteristics of the platform, self-censorship and the culture of users are also identified as important actors in this study. 2) After simplifying the complex network using topological K-theory (k-core), five major communities were explored in the Weibo post and reposting network based on users’ culture, namely a) community of environment-related government departments, b) community of financial information, c) community of

public intellectuals and lay people, d) community of foreign-related institutions, e) community of right-wing media and 'little pinks'. Among them, the right-wing media and little pinks are relatively independent, with little interaction with other communities. 3) The largest community, community of environment-related government departments was identified as a 'black box' in this communication network. According to ANT, once actors are 'punctualised', a network of actors would be taken for granted as "a black box whose behaviour is known and predicted independently of its context" (Callon, 1991:152) and will no longer be questioned and tested (Callon and Latour, 1981). In this process, the sub-network disappears and the actor network becomes a single actor (Van House, 2003:14). The study found that interactions within community of environment-related government departments can be seen as a black box. Besides, unstable punctualisation (Law, 1992:385) can also be investigated in this network when regional natural disasters occur.

## **Submission ID**

1448

# **Understanding Pro-environmental Behaviours: Values and Theory of Planned Behavior**

## **Authors**

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Dr. Wonkyung Kim - Beijing Normal University-Hong Kong Baptist University United International College

## **Abstract**

Despite serious consequences of climate change which includes extreme weather, flood, droughts, bushfire, animal extinctions as well as diseases (Change, 2001; Patchen, 2006; IPCC, 2018), public concern toward such issues has remained unchanged (Pew Research Center, 2020). To heighten public engagement on climate change, gaining a better understanding of the mechanism by which individuals develop their intention to engage in pro-environmental behavior is essential.

To explain how people develop pro-environmental behaviors, theory of planned behavior (TPB) has already been widely applied in the context of climate change. This theory states that behaviors are determined by behavioral intentions. Moreover, behavioral intentions

are affected by three core components: attitude, subjective norm, and perceived behavioral control (PBC) (Ajzen, 1991). However, most of the TPB-based studies have remained oblivious to the impact of values on pro-environmental behavior.

Values are important antecedent factors that are assumed to affect attitudes, norms, and perceived behavioral control (Fishbein, 2000). Value-belief-norm-theory (VBN) introduces a causal chain between value, belief, norm, and behavior (Stern, 1993). VBN is commonly used in an environmental communication context to explain how individuals' values (i.e., egoistic values, altruistic values, biospheric values) could affect their behavior. In other words, VBN adds to TPB by demonstrating that environmental beliefs precede personal values.

Substantial empirical studies have already applied either TPB or VBN to look at people's pro-environmental behavior in climate change context (Kumar, 2021; Tian et al., 2020; Masud, 2016; Verma & Chandra, 2018; Tikir & Lehmann, 2011), however, few studies have combined these two theories together to explain how values could indirectly affect pro-environmental behavior. Thus, the current paper incorporates the theory of planned behavior (TPB) and value-belief-norm-theory (VBN) to propose a new theoretical framework. We use three different types of values (i.e., egoistic value, altruistic value, and biospheric value) introduced by VBN theory as the antecedents of pro-environmental attitude, subjective norm, and perceived behavioral control. In doing so, we expect to provide a more detailed picture of how individuals develop pro-environmental behaviors.

A survey with 500 participants will be conducted to examine how different types of values (i.e., egoistic values, altruistic values, biospheric values) held by individuals can affect their intention to engage in pro-environmental behavior, mediated by pro-environmental attitude, norm, and perceived behavior control. By linking an individual's ecological worldview and pro-environmental behavior together, we can identify what types of value could be positively associated with people's pro-environmental behavior. We expect that our findings will be beneficial for communicating climate change to the public by presenting an optimal message appeal to individuals.

## **Submission ID**

1506

# “I’m in charge of the Earth”: Responsibility in Taiwan’s Social Media Environmental Advocacy

## Authors

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## Abstract

Social media are home to countless discussions on all matters environmental. The importance of these online spaces has never been as clear as during the coronavirus pandemic. It is on platforms such as Facebook that individual and organizational actors alike attempt to persuade audiences to take responsibility for confronting environmental degradation or climate change. But how exactly do they imagine environmental action? And who are their implied audiences? This article draws upon thematic analysis and discourse analysis of 23 selected Facebook status updates surrounding Earth Day 2020 in Taiwan so as to paint a critical picture of social media environmental advocacy within mainstream environmentalism. The texts were chosen manually on the basis of two factors: Time—the status updates must have been submitted on April 22, 2020, the exact date of the 50th anniversary of Earth Day and the day when most of the event-related social media activity occurred, and content—the status updates must have contained persuasive language in the form of explicit pragmatic appeals (e.g., “Sort your waste.”) or otherwise oriented the audience’s relationship to the environment (e.g., “Cherish our home.”). The texts for this study all came from a corpus of public status updates employing the hashtag “#地球我罩的” translating to the slogan *The Earth I Cover* in a formal equivalence approach or *I’m in charge of the Earth* in a functional equivalence approach. The texts, originally in Modern Standard Chinese, were translated to English by the author before analysis. Guiding the examination were Maniates’ idea of individualization of responsibility, denoting a popular, consumption-oriented response to the contemporary environmental crisis, Shamir’s observations regarding responsabilization, which places responsibility for public problems on social actors similarly viewed through the market’s lens, and Pezzullo & Cox’ understanding of environmental communication as symbolic action encompassing pragmatic as well as constitutive modes of expression. The findings echo concerns raised in past literature that popular messages advocating environmental action do so through power-obscuring, individualizing language, identifying green consumption and minor lifestyle changes rather than civic engagement as the solution to environmental ills. The status updates request that individualized audiences task themselves with addressing the dangers ahead through enacting what is right according to the market-embedded ethics. This prescription, in place for decades, leads not to lasting social change but to society that busies itself with the latest sustainability trends and ironically hinders its capacity to imagine other responses to

the environmental degradation. The article also discusses the few counterexamples encountered in the text corpus—status updates that do indeed advocate different means of action—and how they differ from the prevalent discourse.

## Submission ID

1579

# Panacea contact tracing? A pilot study in the Netherlands and Turkey to assess public preferences for the adoption for a COVID-19 tracing app

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## Abstract

**Background:** Despite the worldwide growth in using COVID-19 tracing apps and the potential benefits for all the actors in the Quintuple helix system (Carayannis et al., 2012), limited scientific evidence exists that explains the adoption levels of these COVID-19 tracing apps. Nonetheless, high levels of app adoption among the population is a stipulated prerequisite for success of the implementation of these apps, developed with the aim to mitigate the pandemic and open up societies. Considering in the majority of the countries COVID-19 tracing apps have been implemented in a relatively short time span, the protection of privacy, equality and fairness in this digital contract tracing is not always guaranteed. However, according to Klar and Lanzerath (2020), the risks of privacy and equity have to be taken into account. A global public health community constituted by the adoption of COVID-19 tracing apps requires the consideration of individuals' voluntariness which depends on different aspects. More specific, a recent study has shown that people

with more concerns about secondary use of their personal data were less likely to use certain mobile health apps (Bol et al., 2018). Additionally, profit-oriented developers of mobile health apps proceed their activities between the poles of striving for optimal health care and seeking for profit (Bauchner & Fontanarosa, 2013) and the public is not always convinced that industry's first priority is patients' interests (Olsen & Whalen, 2009). In the current study, we investigated several individuals' preferences in the adoption of a COVID-19 tracing app in a pilot-study in both the Netherlands and Turkey.

**Methods:** We conducted a discrete choice experimental study in two countries (the Netherlands [N=62] and Turkey [N=83]), with four different attributes: 1) data protection (data protection vs. no information), 2) manufacturer (government vs. company), 3) reward (no reward vs. voucher as a reward) and 4) gaming (no gaming elements vs. gaming elements). Participants were recruited among a student population.

**Results:** The results showed that data protection is one of the most important factors that significantly increases the probability to adopt a COVID-19 tracing app. In general, the manufacturer, reward or gaming affected the probability to download the COVID-19 tracing app less. In general, we found no significant differences between the Netherlands and Turkey.

**Conclusions:** COVID-19 tracing apps are highly promising to reduce the spread of the virus and make it easier to open up society faster, especially because they can be used quickly and share information rapidly. Health authorities worldwide have generally released high quality COVID-19 tracing apps, although scientific studies assessing the most important factors that describe and predict adoption is limited. The current study tested various attributes that could guide further engagement-enhancing app development. Based on the current findings it is important to have sufficient ethical oversight. Sensitive personal data is collected through these apps, and may potentially threaten privacy, equality and fairness. Even if the COVID-19 tracing apps are implemented temporarily, rapidly rolling out tracing technologies runs the risk of establishing permanent and vulnerable records of citizen's health, movements and social interactions, which might affect people in the future.

**Keywords:** COVID-19 tracing app adoption; discrete choice task; pandemic; mitigation strategies

## **Acknowledgement**

The discrete choice experimental study was executed within the scope of the project "PandeVITA: Pandemic Virus Trace Application for the Effective Knowledge Transfer Between Science and Society Inside the Quadruple Helix Collaboration" and has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101006316.

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## Submission ID

1663

# Framing New Energy Vehicles: a Longitudinal Study of Mainstream Newspapers in China

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## Abstract

With the low-carbon transformation of the energy system, New Energy Vehicles has occupied a more and more important position in daily life. Previous studies have focused on newspaper coverage of various environmental issues while the new energy vehicles kept under-explored on a global scale. In China, the development of new energy vehicles is both a personal lifestyle and a requirement of national policies, so it has considerable research value. After the government announced to promote the industrialization development of new energy vehicles in 2009, China has been the largest new energy vehicles

holder in the world since 2016. In the process, media coverage about new energy vehicles played a vital part in the expansion of new energy vehicles. Investigating the Chinese media's coverage of new energy vehicles will promote our understanding of how mediums work in enhancing the development of a new industry and technology and how they communicate with the public to spread the idea of sustainable development. Applying the frame analysis approach, the article examines the media coverage of the new energy vehicles from 2009 to 2021 in two of China's mainstream newspapers, *People's Daily* and *Guangming Daily*, and summarizes the longitudinal changes and stage characteristics of the reports. The newspapers both have a large audience in China. Considering the special role new energy vehicles played in environmental protection, we also focused closely on the degree to which Chinese media's reports on new energy vehicles relate to "environmental change" and "sustainable development" issues. The data shows that the coverage on new energy vehicles grew in fluctuation and the economic frame and the technology frame are the most commonly used. The result resonated with the national policies of promoting the new energy vehicles by financial incentives and emphasizing scientific progress. The reports mainly focused on national industry development, showing the concern of national interests. In general, the reports centered more on sustainable development than on climate change. A longitudinal transformation from climate change to sustainable development is discovered, demonstrating that after the smog control succeeded in Beijing, China has changed from a negative problem-solver to a positive actor for sustainable development.

## **Submission ID**

1692

# **Analysis on Chinese and American Mainstream Media Reports on Carbon Neutrality —Taking the New York Times and China News Service as Examples**

## **Authors**

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## Abstract

Global warming has become a huge crisis faced by human beings in the 21st century. Countries' responses to and governance of climate change will have a direct impact on international public opinion and political engagement. As the world's largest developing country and the largest emitter of carbon dioxide, China plays a pivotal role in the global climate governance arena. On September 22, 2020, Chinese President Xi Jinping proposed China's climate change targets at the general debate of the 75th session of the United Nations General Assembly, namely, "China will achieve carbon peaking by 2030 and carbon neutrality by 2060", which has attracted attention worldwide.

The New York Times (NYT) and China News Service (CNS) are the two media selected for this study. The NYT, one of the three major newspapers in the United States, has focused heavily on ecological and environmental issues since 1981. As for CNS, it has held a series of "China Corner" side events during the United Nations Climate Change Conference for seven consecutive years and has always held a high level of attention to climate issues. Therefore, the two representative media can reflect the characteristics of carbon neutral issues covered by mainstream media in China and the United States.

This study collected a total of 415 China-related reports on carbon neutrality (312 from CNS and 103 from the NYT) from September 22, 2020, when President Xi Jinping proposed the target, to November 14, 2021, when the 26th United Nations Climate Change Conference closed, as research samples. To investigate the differences between the two media, the study adopted the content analysis and social network analysis as the research methods to explore the communication landscape of carbon neutral issues in the two media.

This study found that these reports by CNS and the NYT showed different characteristics in the following five aspects. Firstly, from the perspective of keywords, CNS focused on key words such as "development" and "green" while the NYT focused on "political status" and "diplomacy". Secondly, from the perspective of news genres, CNS mainly featured economic news, while the NYT featured more political and diplomatic news. Thirdly, from the perspective of coverage scope, the news in the NYT was mostly a macro discussion, but CNS also reported on micro-cases. Fourthly, from the perspective of sources, CNS used official information released by authoritative institutions, while the NYT mostly used views of special commentators or scholars. Fifthly, from the perspective of emotional tendencies, CNS mostly reported positively, while the NYT mostly reported negatively with suspicion and denial.

On this basis, the author summarized the narrative strategies of the two media as intensification and weakening of news coverage, discourse replacement and issue transfer. In addition, the author analyzed the reasons for these differences in ideology and the idea of communication.

Ultimately, taking carbon neutrality as an example, the author had a discussion over the path for China to improve its international communication influence from two aspects: innovating the communication path and creating multiple subject.

## **Submission ID**

1790

# **When a crisis is an opportunity: Radio Televisión Canaria's use of augmented reality in the news coverage of the volcanic eruption in La Palma**

## **Authors**

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Dr. Sara Pérez-Seijo - Universidade de Santiago de Compostela

## **Abstract**

Augmented reality (AR) technology is making its way into journalism as a narrative disruption that offers new possibilities for storytelling (Pavlik and Bridges, 2013) and for enriching the news consumption experience. Its introduction in newsrooms responds to the constant search for novel ways of telling the news and engaging the audience (Aitamurto et al., 2020), although it has been favoured by the high penetration of mobile devices (Engberg and Bolter, 2014). Along with the development of the technology, some media outlets began to explore uses beyond the QR codes to represent reality and foster understanding of complex issues (Gaztaka et al., 2020). It is the case of broadcasting, which in recent years have experimented with augmented visualizations in TV studios for reporting on elections, bringing weather to life or even recreating environmental disasters.

Taking this context into account, this proposal seeks to understand how AR technologies can be used for reporting on natural disasters. In particular, this research is based on the case study of the Radio Televisión Canaria (RTVC) and its use of AR to cover the first phase of the volcanic eruption on La Palma (Spain). The aim of this study is twofold: to analyse the role played by AR in the news coverage of the natural disaster; and to examine the impact of the technology on the audiovisual narrative of the public broadcaster.

The research is based on a mixed-method design combining quantitative and qualitative techniques. First, an exploratory study was carried out to identify the AR visualisations

broadcasted between the 13th of September -activation of the alert for volcanic risk- and the 19th of October 2021 -one month after the start of the eruption-. Second, and in order to examine the function of the AR narrative in the informative discourse, a content analysis of the sample extracted (N=50) was performed. To this end, an analysis sheet was prepared according to the research objectives and taking as a reference other authors' proposals (Azkunaga et al., 2019; Ikonen and Uskali, 2020). Finally, and aimed at triangulating the results, semi-structured interviews were also conducted with professionals at RTVC.

The findings reveal that RTVC leverages the visual and immersive nature of the AR technology to inform about a complex event in which traditional image capture tools are not enough to explain what is happening regarding the eruption. The news reporting is supported by a virtual recreation that allows to depict the reality being narrated and to spatially move the viewer into the scene. Therefore, AR is used to bring events closer to the audience and to facilitate both assimilation and understanding of an unprecedented devastation in La Palma.

In short, AR is introduced into the television narrative as a technological innovation that leads to a new form of telling, experiencing and understanding the news in a way that would not be possible through other journalistic formats. Its informational potential is presented as a differentiating factor in journalistic reporting, while also opening up new ways to connect with the public.

## **Submission ID**

1795

## **F/act movement for transformation of a polluting fashion industry – the case of influencers as green consumers**

### **Authors**

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### **Abstract**

The global fashion industry's devastating environmental impact is widely known and increasingly contested (Niinimäki et al, 2020). The media industry, both in terms of print and online professional media with content produced by journalists and influencers, are also shown to widely promote this unsustainable high consumption (Denisova, 2021). The F/act

movement started as a project in Sweden a couple of years ago in order to promote more sustainable production and consumption of fashion and fabrics. Part of it can nowadays be described as an emerging social movement that gathers people with a high interest in fashion, shown on social media platforms such as Instagram, but that are also concerned about climate change and other pressing environmental problems. Together they learn about the impact of clothes and what alternatives there are that could improve the situation. One such move is to stop consuming new items altogether, which they also try to do.

The purpose of this paper is to share and discuss results from a recent study that follows a group of so-called f/activists in order to learn about how these influencers make sense of and experience their position as public role-models for slow fashion. What have they learned, what has surprised them, and what obstacles have they identified along the way? Do they feel empowered and have the engagement decreased e.g. their climate angst? The gendered dimension, all volunteers i.e. turned out to be females, is also touched upon in the analysis. The bloggers use of digital and social media, primarily Instagram, as a mean to reach a green goal is of particular interest.

We took inspiration from Couldry, Livinstone and Markham's (2007) innovative project about media consumption and public engagement when designing the method for the study and therefore asked the participants to write diaries about their f/activism during a period of two weeks. We combined this data collection with follow-up focus group discussions with the participants in order to capture the social meanings of the topics articulated in the individual narratives (Wibeck, 2000). In addition, we studied the Instagram posts and public media profiles that these influencers had and tagged as part of the F/act movement.

The results tap into a discussion about digital labour and the workings of consumer power, and this in a world full of hopes that digitalization in itself will bring solutions to many global challenges, including climate change. The European Commission's (2019) launch of "The European Green Deal" is one recent example. One interesting preliminary result is that a long-lasting green transformation seems to take place, at least among the engaged influencers. Several bloggers claim that once they have managed to stop shopping for new outfits, they really do not desire going back to old habits of mass consumption. Instead, they are focused on mending broken garment in their wardrobes, buying second hand etcetera. Their experiences as Instagram bloggers also show clear signs of feeling pressure to perform and produce content on a regular basis for their respective followers.

*Keywords: fashion industry; influencer; sustainability; digitalization; Instagram*

## **Submission ID**

1837

# A Dead Forest? Leveraging Teachable Moments for Environmental Knowledge Translation

## Authors

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## Abstract

On the 11<sup>th</sup> of March 2020, the World Health Organization (WHO) declared the outbreak of a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) a pandemic. Not much was known about the virus or its mutagenic properties until then. By the 22<sup>nd</sup> of March, in what would suggest an increased information-seeking behaviour amongst different audiences, 'Covid-19' was already a trending topic on global news platforms and the most searched term on google web search. As with the COVID-19 outbreak, many studies have shown a clear relationship between crisis events and elevated knowledge-seeking behaviour. The characteristics of a crisis event that inflame the public's knowledge-seeking behaviour are best explained by the *teachable moment* (TM) construct. Conveyed as 'teachable opportunities' (Vijay et al. 2015), TMs are 'events that motivate spontaneous behaviour change' (Shi et al. 2009). *Teachable moments* exhibit cognitive – information-seeking behaviours – and emotive characteristics. It is a window of opportunity that allows “mindful teachers” to share contextual knowledge with 'ready learners' (Miller et al. 2021). Therefore, a teachable moment is an opportunity to engage and communicate with ready learners at their most receptive state. Given the valuable characters of *teachable moments*, how might risk communicators and knowledge translation researchers leverage environment-impacting crises like bushfires to engage the public on climate issues and forest ecology? Also, how might existing knowledge translation approaches – e.g., *informal science learning* – become more effective for *teachable moments*? I explored these questions with a case study of the 2018-19 Tasmanian bushfires. I examined how deploying an informal science learning solution about fires and forests in the aftermath of a bushfire increases the public's knowledge of forest regeneration processes and climate conversations. Already, *informal science learning* helps to effectively diffuse scientific knowledge amongst different audiences and contexts (Lloyd et al. 2012, Kothari et al. 2017). Thus, deploying an *informal science learning* solution at a nominated *teachable moment* presents an opportunity to theorise emerging possibilities for effective environmental knowledge translation and risk communications strategies.

## Submission ID

1865

# **Mediatized governance in disaster: The role of serial participants in the rescue network**

## **Authors**

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## **Abstract**

The frequent occurrence of extreme weather disasters in 2021 poses new challenges for disaster governance. Through the examination of public participation in an open-source rescue document during a rainstorm in Zhengzhou, China in July 2021, this study explores how the disaster relief was realized through open-source and self-organizing communities. Specifically, this study analyzes how the serial participants of the open-source rescue document play a central role in facilitating effective governance of rescues. The major questions we aimed to answer are the following questions: In the conflict between the somewhat chaotic open participation and bureaucratic hierarchy for efficiency, how can serial participants strike a balance between the two to influence the structure of open-source self-organizing communities and its rescue effect? What implications does this mediatized serial participation have on rescue governance?

Serial participants are defined as those who consistently engage in online interactions over a long period of time and help to form a structured network of issues and organization among the members with common goals and capacity for action. Research shows that the long-term efforts of serial participants can bring about a major policy change and even social change (Sommerfeldt & Yang, 2017), and drive professional practice, as well as deepen one's own expertise and capabilities through continuous interaction (Wang et al., 2019). On the contrary, the large number of short-lived participants does not contribute much to the goal of a collective action.

Through mixed methods of social network analysis and cyberethnography, this study illustrated that an emerging model of mediatized governance, facilitated by new technology and serial participants, has remarkably strengthened the rescue effects. In particular, serial participants can successfully improve the probability of successful rescue, as network intermediaries who shorten the interaction distance. At the same time, through the WeChat

based self-organized admin discussion group, serial participants provided and optimized major public goods and service, bridged the rescue resources and needs, smoothed the information streamline, protected privacy, and connected multiple actors.

In the meantime, as serial participants' role become increasingly crucial along the expansion of the size of the self-organization, bureaucratization and recentralization of open-source self-organizing communities occurred. This bureaucratic structure, nevertheless, does not necessarily reduce the efficiency of self-organization; on the contrary, an appropriate bureaucratic structure guarantees the professionalism and rescue effect of the self-organized community. This study deepens our understanding of the particular mechanisms and actors of mediatized governance of rescue.

## **Submission ID**

2089

# **Increasing Challenges and Shrinking Roles: Environmental Journalists in Nepal**

## **Authors**

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## **Abstract**

This article investigates how environmental journalists in Nepal perceive their professional challenges. Drawing on an in-depth interview of 10 journalists, it argues that Nepali environmental journalists face various kinds of challenges at an individual as well as organizational level that have directly hindered the coverage of environmental issues.

Media researchers have long been interested in the challenges of journalists, including specialized reporters such as environmental reporters. While Nepali news media are still dominated by political and economic news, we contend that environmental issues are slowly making their mark, especially during the last decade. Although Nepal's greenhouse gas contribution to the atmosphere is not significant globally, Nepal is one of the world's most vulnerable regions to global environmental change and disaster (Shrestha et al., 2012; ICIMOD, 2010). Due to its geography, the country is exposed to a range of climate

risks and water-related hazards triggered by rapid snow and ice melt in the mountains and torrential rainfall (Climate Links, 2021).

Across the global south, climate change journalists are growing in number and experience. But, limited media coverage on climate change occupies only a tiny proportion of total media reporting as due to the misconception that climate change is only about science and environment rather than high-profile and popular topics such as politics, national security, health, livelihood, and economy (Jones, 2012; Shanahan, 2011). Moreover, some of the studies (Das, 2012; Shrestha, 2012) argues media researchers have not paid much attention to environmental journalism probably because mass media scholarship, like mass media, arises in highly developed urban societies with a strong emphasis on the political and the social affairs.

Mainstreaming environment journalism seems a dominating challenge as environmental news coverage is more event-oriented in Asia; as Das (2012) contends, in a non-western context, environmental reporting looks 'episodic' where incidents are covered, and journalism stands in the comfort zone of covering the political game surrounding environmental problems. For example, in Indonesia, the press does not consider environmental issues as important issues that affect people's lives, resulting in less prioritization (Abrar, 2020).

Reporting the events alone does not meet the essence of environmental journalism. However, engaging the audience while conveying complex concepts through a well-told story can lay an impact (Betts and Gibson, 2012). In a similar tone, Abrar (2020) suggests the role of environmental journalists not only as an informer but also as campaigners and advocates. A report of Reporter without Borders in 2015 stated: "Hostile Climate for Environmental Journalists" highlighting environmental journalists who were murdered or otherwise attacked in Cambodia, the Philippines, Indonesia, India, Egypt, Uzbekistan, and elsewhere (Reporters without Borders, 2015).

The chapter uses hierarchy of influence model to critically analyze these challenges in environmental reporting as perceived by the reporters and its impact on news coverage. Problems dealing with environmental journalism seemed to fall into five main areas: (a) Changing industry trends b) Limited resources/ Lack of motivation c) Safety risks and limited media independence d) Newsroom routines and e) Institutional (Extra-Media) Influence . While some of these challenges are global there were some local factors too.

## **Submission ID**

2098

# “Little Pinks” and Disorganized Collective Action: Playful Patriotism of Climate Change Discourse in Chinese Social Media

## Authors

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## Abstract

Individual social behavior is considered as an important mediator between patriotism and pro-environmental supports (Hamada et al., 2021). However, in the context of China, online discussion of climate change is dominated by official discourse and the media (Liu & Zhao, 2017), while individuals are regarded as disorganized power. Although the Internet has empowered the general public, the Chinese public has not yet become affective publics, who are able to lead explicit online activism (Papacharissi, 2015). Hence, related studies often centered on antagonistic discourse in Chinese online communication (Gleiss, 2015). Nevertheless, evidences were provided that more and more individual netizens, represented by “little pinks” (Shan & Chen, 2021), actively construct dialogic communication with institutional accounts in Chinese climate change discourse via social media affordances. These individuals' self-mobilized and vibrant participatory cultures in online climate change communication demonstrated the form of “playful patriotism” (Chen et al, 2021). “Little pinks”, labeled as pan-politicized Chinese netizens, are nationalistic-oriented but not extremely polarized in climate change discussion. Individual participation in producing cyber-nationalistic content also illustrated the role shift from superstar fans to national discourse writers.

Based on Weibo posts with the keyword “climate change”(气候变化) from 2016 to 2020, the paper employed exploratory multimodal discourse analysis (**Table 1**) to examine how online affordances of visibility, association, and editability lead to the formation and transformation of climate change cyber-nationalism over the years. Specifically, this paper identified the nationalism themes in post texts and how Weibo users constructed online collective dialogues by social media linking features like “forward” or “@”.

This study explored cyber-nationalism in the context of Chinese online climate change communication. It explicated the formation of “playful patriotism”, and how Chinese netizens utilized playbouring cyberspace to form alliances and defend for national discourses. Meanwhile, Chinese individuals also corrected over-politicized patriotic parochialism to a much broader socio-cultural concept.

**RQ1:** Which Weibo affordances, combined with social media linking features, in climate change posts facilitate the production of cyber-nationalistic content?

**RQ2:** What nationalistic themes emerge through multimodal discourse analysis of climate change posts on Weibo from 2016 to 2020?

**Table 1.** Affordances of Weibo Facilitate Climate Change Cybernationalism

**Affordance 1:** Visibility

- **Description:** Visible and identifiable information

- **Examples in Weibo:** Hashtag

**Affordance 2:** Editability

- **Description:** Allowance of text editing and dissemination

- **Examples in Weibo:** Forward

**Affordance 3:** Association

- **Description:** To illustrate the relationship building with others

- **Examples in Weibo:** @

*Notes.* Revised from Hautea et al. (2021)

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## **Submission ID**

2135

# **“The Winters Are Gone” : Indigenous Peoples’ Experiences of Climate Change in the eastern Indian highlands**

## **Authors**

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## **Abstract**

Indigenous (or tribal) people, like the Kondh of the east Indian highlands are greatly dependent on their natural environment. The forest is usually seen as a life-giving mother, and the hills are the grounds upon which tribal life and culture thrive. The Kondh possess a rich knowledge of these hills- most know what herbs and roots, once abundantly found in the forests, can heal different ailments. The Kondh traditionally ate a diverse diet of scores of different millets, mushrooms, tubers, spinach and other forest and wild foods. The Kondh way has been one of self-sufficiency: with their unique agricultural practices and their rich ecological knowledge, the Kondh also maintained cultural and religious practices unique from mainstream Indian society.

It has long been known that Indigenous peoples are particularly vulnerable to climate change (IPCC, 2007). Indigenous survival and wellbeing is affected by changes to the ecosystem (Oviedo and Fincke, 2009) and this can very well be seen in the highlands of eastern India. In recent years the Kondh have reported erratic rains, years of alternating droughts and floods, changes in the wild foods found and consumed, as well as stories of disappearing streams and rivers. Memories of past climate expresses these rapid changes to the hills of the Kondh. Yet for some tribal communities climate change is heightened by other political and social realities. In the last several decades tribal lands have been acquired for development activities, resulting in the displacement of tribal people from their lands that are critical to their spiritual, physical and emotional wellbeing (see Mishra, 2013).

The purpose of this paper is two-fold. First, it seeks to prioritise Indigenous peoples' experiences and articulations of climate change, drawing from ethnographic fieldwork conducted among the Kondh of the east Indian state of Odisha. Secondly, it situates tribal experiences of climate change (memories of past environments, erratic weather) against the

backdrop of the dominant and conventional discourses (including in the media) of development, neoliberalism and climate change. 'Development' is ubiquitous within public discourses; neoliberalism as a term perhaps isn't but its impacts can be seen through the recent development activities such as mining, where large corporations have expanded their presence in resource-rich areas inhabited by Indigenous communities. So, the threat from climate change is exacerbated by challenges from the neoliberal state, where these development interventions are seen as a necessary and as an unavoidable evil within public and media discourses. This paper also draws from discourse analysis to situate tribal articulations of climate within these larger (public and media) discourses of climate change and development.

## **Submission ID**

2173

# **A Frame Analysis of Reports on "Carbon Neutrality in China" According to the CMM Theory - Using the Example of "China Daily" and "New York Times".**

## **Authors**

Ms. Shuang Gao - School of Journalism and Communication, Tsinghua University

## **Abstract**

At the 75th session of the United Nations General Assembly on September 22, 2020, Chinese President Xi Jinping unveiled China's goal of "carbon peak" by 2030 and its vision of "carbon neutrality" by 2060, demonstrating China's determination to actively implement the Paris Agreement and take the role in global climate policy.

As disseminators of information, the media play a key role in environmental communication. This is because the media has multiple functions in reporting environmental issues, mobilizing social forces, warning about risks, educating about the environment, etc. The way the media constructs and communicates the issue of "carbon neutrality in China" directly affects the audience's perception of China's environmental protection in climate change.

Based on the coordinated meaning management of meaning (CMM) theory, this article analyzes the China Daily and New York Times reports on "carbon neutrality in China" from September 22, 2020 to December 31, 2021, using word frequency analysis, topic

clustering method, manual encoding to explore the elements of the reports on "carbon neutrality in China" are examined using word frequency analysis, topic clustering method, and manual coding. Different from the traditional frame analysis of reports on "carbon neutrality in China", this article not only considers the emotional tendency, topic attributes and agenda-setting topics, but also codes the six levels of coordinated meaning management of meaning: Content, Speech, Contract, Action Fragment, Life Script and Cultural Model in each report.

The results show that 69% of China Daily reports focus on defining problems, including positive changes, and difficulties in environmental protection in China. 78% of the New York Times reports focused on diagnosing causes, including international relations and the intention of cooperation between Chinese and American politicians. In terms of coordinated management of the theory of significance, the diversity of China Daily's information sources was much lower than that of the New York Times, especially the sources from citizens, officials of UN or other environmental protection organizations.

The New York Times reports are good at coordinated meaning management because the six levels are more comprehensive, but they focused more on politics and diplomacy, less on the new energy industry and the benefits that carbon neutrality brings from China. China Daily, on the other hand, lacks the levels needed for coordinated meaning management (CMM theory) in its series reports on "carbon neutrality in China," such as Action fragments (stories with a clear beginning, course and end); Life script (a series of actions in the past or present used to communicate effectively with others); Cultural patterns (images of the world and its relationship with individuals), which made it difficult to influence others and build consensus among different people, as well as construct a responsible national image regarding climate change.

This study analyzes the differences and similarities between Chinese and American reports on "China's carbon neutrality" within the framework of CMM theory. It is of great significance for the promotion of environmental communication in different countries to jointly cope with the environmental crisis of mankind.

## **Submission ID**

2200

# **Grassroots activism or political stunt: Media representation of Greta Thunberg and global youth climate activism in the United States and China**

## **Authors**

Ms. Zheng Cui - Pennsylvania State University

## **Abstract**

Efforts from civil society have always been one of the major forces in the global action of curbing climate change. A wave of youth climate activism, initiated and led by Swedish teen activist Greta Thunberg, has brought new momentum to grassroots climate change advocacy since 2019. Rising from a solo school kid striker with autism to a world-renowned iconic advocate for climate change, Greta Thunberg and the youth activism she represented received complicated media portrayals around the world. (Bergmann & Ossewaarde, 2020; Olesen, 2020; Ryalls & Mazzarella, 2021).

This study examines and compares the media representation of Greta Thunberg and the youth climate movement in mainstream media outlets in the United States and China, by analyzing mainstream news coverage of Greta Thunberg and the worldwide “Fridays for Future” movement over the course of five months from Aug 1st to Dec 31st, 2019. During this time frame, Thunberg and her activism gained remarkable popularity globally through three focal events: Travelling across the Atlantic ocean on a zero-emission sailboat in early August; speaking in a UN meeting, and interacting with the US President Donald Trump in late September, Attending UN COP25 climate summit and being nominated “Person of the Year” by the *Time* magazine.

Preliminary findings show significant differences in the quantity of climate activism coverage between the US and China. Compared to prevailing coverage of the events around Greta Thunberg and the youth climate movement in the United States, very few media reports featured such activities in Chinese media. Also, a qualitative content analysis of 79 news articles from China and the United States shows commonalities in coverage between Chinese market-oriented media and US media and different frames between Chinese state media and the US media portraying Thunberg and youth activism. While US news organizations and some Chinese market-oriented media emphasize the grassroots nature, influence, and the attacks toward Thunberg and the movements, Chinese state media tend to frame youth climate activism as “causing chaos” and “political stunts.”

## **Submission ID**

2242

# Deforestation and the climate crisis: News media's issue attention across five countries

## Authors

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## Abstract

Despite deforestation being a major driver of climate change (Seymour & Busch, 2016), it is often marginalized as a causal factor in mainstream news media's reporting (Wessler et al., 2016). This study tracks the relative frequency with which media outlets from five countries have made references to deforestation in their climate change coverage from 01/01/2011 to 31/10/2021, one day before COP26 began in Glasgow.

Our media sample consisted of *The Age* and *Herald Sun* (Australia), *Globe & Mail* and *Toronto Star* (Canada), *Hindustan Times* and *The Times of India* (India), *Daily Mail* and *The Times* (UK), and *The New York Times* and *USA Today* (US). We are currently also collecting data for future analysis from *Folha de Sao Paulo* and *O Globo* from Brazil, a country that has seen devastating levels of deforestation in recent years (Imazon, 2021).

For our existing media sample, we used the search string "climate change" OR "global warming" OR "climate crisis" OR "climate emergency" OR "climate catastrophe" and recorded the number of results for each news outlet. A second-level search for deforest\* OR logging within this corpus allowed us to calculate the relative issue attention score for deforestation within climate change coverage.

We find that deforestation plays a very limited role in climate change reporting overall. Annually, the overall issue attention score ranged between 1.42% in 2016 and 2.67% in 2019, declining in 2020 and again in 2021 (up until 31 October). Mentioning deforestation in climate change coverage was slightly more common — compared to the five-country average — in Indian and US newspapers, and less common in the UK and Australia ( $\chi^2(df = 4, N = 1,736) = 245.267, p = .001$ ). The relationship between country and attention to deforestation was moderate (Cramer's  $V = .376$ ). Broadsheet newspapers from Australia, the UK, and the US (*The Age*, *The Times*, and *The New York Times*) report about deforestation within their climate change coverage significantly more often (2.31%) than tabloid/mid-market newspapers from the same three countries (*Herald Sun*, *Daily Mail*, and *USA Today*) (1.23%) ( $z = 8.0333, p > .001$ ).

Ongoing and future data analysis will focus on (a) drivers of media attention (e.g., scientific or NGO reports, domestic politics, or economic conditions, see Mangani, 2021) and (b) the media's issue-specific framing of deforestation as a driver of climate change in comparative perspective.

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## Submission ID

2285

## Media framing of wildfires by portuguese newspapers: which story is told and by whom?

### Authors

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## **Abstract**

The summer and autumn of 2017 in Portugal were marked by the most catastrophic wildfires in the history of the country with tragic consequences: 117 fatalities, hundreds of buildings destroyed, and more than 500.000 ha of forest area burned, including *Mata Nacional de Leiria*, the oldest public forest in Portugal. These wildfires exposed the vulnerability of the population in rural areas and the need to implement measures to assure assistance and increase people's preparedness to the risks resulting from climate change. Literature reveals that primary and secondary experience (through the media) of specific events is an important factor in wildfire risk perception (Pavleglio et al., 2011; Silva et al., 2019). As the media take this prominent role in forming citizens' perceptions, they have been subject to studies and recommendations regarding how they cover wildfires (ERC, 2018; Plana, E. & Font, M. 2015). Hence, the analysis of media coverage gives us important data to understand people's perception of wildfires. International research on this subject has been published, but it is missing an in-depth analysis of Portuguese media coverage of wildfires.

A comparative longitudinal study was performed, consisting of a content analysis of the press coverage of wildfires between 2016 and 2019. This broad temporal scope allows us to identify possible continuities or changes related to the events of 2017. We considered online news published by two very distinct national newspapers (one representative of quality press, "*Público*", and one representative of the tabloid press, "*Correio da manhã*"). On the website of each newspaper, the search terms used were "wildfire" and "forest fire". The sample reached 4365 documents (1279 from "*Público*" and 3086 from "*Correio da manhã*"). Descriptive (e.g. year/month, type of content, reported event, source) and discourse (e.g. primary focus, adopted perspective, reference to a policy problem, or use of scientific data) categories, defined according to the literature review, were used to classify each document. Results for press coverage characterization by type of newspaper and categories distribution analysed according to the framing theory approach were presented. Categories such as stories' primary focus, leading actors and sources, how the responsibility is addressed, and how the event is presented allow us to discuss the relation between these categories and the mainframe used to tell the stories, whether it is a central and urban lens or a local and rural one. We follow Öhman et al. (2016) and Walker et al. (2020), whose analysis of the media coverage of severe wildfires in Sweden and Canada identified dominant narratives that silenced other perspectives, namely those of the local communities. The study of this reality in the Portuguese context offers us a better understanding of the media's role in forging local communities' preparedness for wildfires.

## **Submission ID**

2334

# **Communication Strategies and the Socio-Cultural Construction of Disaster Risk Among Stakeholders in a Riverine Community in Infanta, Quezon, Philippines**

## **Authors**

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Dr. Maria Stella Tirol - University of the Philippines Los Baños

## **Abstract**

Natural disasters and climate variability pose insurmountable challenges to sustainable human development because they shake the structure of social systems and the built environment. Contemporary research in the “hard” sciences (e.g., environmental science, engineering, disaster management) commonly known as the scientific-technical or technocratic perspective have dominated the disaster risk literature which posits that risk is a quantifiable and objective phenomenon. Contrary to existing literature, risk is not a neutral concept. Natural disasters such as floods and cyclones are both socially and culturally constructed and perceived by different people in different ways. This paper attempts to highlight the value of integrating different social actor’s socio-cultural constructions in disaster risk communication in the national and local disaster risk reduction and management (DRRM). This paper, therefore, sought to explore the role of communication in socio-cultural construction of disaster risk among selected stakeholders in a riverine community. This study was anchored on the theoretical traditions of social constructivism. Exploring the constructs in the study of riverine communities, the researcher utilized purposive sampling from 32 research participants. Textual analysis revealed that in the view of the study, chronic flooding is a permissible and negotiated disaster risk. People acknowledge that flooding is embedded in their identity as a riverine community and the local culture reached a permanent state of accommodation of disaster experience. While information from media and early warning signals are important source of disaster information, the community heavily relies on local prognosis and as metric for disaster risk. For a community that is heavily dependent on agriculture for livelihood, awareness and acknowledgment of risk is the first step to preventing disasters as they take and develop systems of response. In sum, individuals are never to be separated arbitrarily from their social and cultural surroundings. Disaster risk

communication and management must take into account the underlying socio-cultural factors that determine this nature.

## **Submission ID**

2342

# **How People Perceive Climate Change Risks: Evidence from Social Media in China**

## **Authors**

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Ms. Shichao Zhang - School of Journalism and Communication, Renmin University of China

## **Abstract**

Climate change and public perceptions of the risk issues involved or evoked by climate change are topics of interest to society. Social media have opened up new channels for public debates and have revolutionized the communication of prominent public issues such as climate change. In traditional risk society theory, as the lingering "shadow" of modernity, risk resides in a given field and corresponds to a given "risk problem". However, in the age of social media, multiple social actors have connected as different risks interpretative community, and the "risk problem" is expressed as a collective construction. This situation requires us to consider how different actors are involved in the discussion of climate change risk issues and how their discursive frameworks are changing to explore the process of construction of the climate change risk issues.

Based on the perspective of risk culture and the issue-attention cycle model, this study aims to employ a text mining approach to examine variation and evolution in framing global climate change risk issues in social media. We collected 172850 tweets concerning the climate change risks from the China-based social media platform Weibo. Automated text analysis and structural topic modeling (STM) were used to extract topics from the content and identify topic communities. To interpret each topic community, we analyzed frame elements (i.e., problem definition, cause, solution, and moral judgment), primary sources, topics, and languages in tweets highly associated with topics in each community. Furthermore, we analyzed the distribution and changes of each framing discourse in different climate change risk issues focus cycles.

Our findings indicate the frames of climate change risks, including the definition, attribution, impact, evaluation, control of risks, and related events. Global disaster risk and environmental risk discussions on climate change on social media have gradually waned over time, while moral frameworks, policy development frameworks, and risk governance frameworks have shown growth. The basic assumption of traditional risk society theory is that risk is transferable based on specific governance techniques—either by transferring risk between countries or distributing risk within different countries. However, public discussions of climate change risks tend to shift to everyday experiences, with different subjects bearing the "consequences of uncertainty" relatively equally, and "community of shared risk" comes to be a concept to shape public imaginations on climate change.

Previous studies suggest that frame evolution is a socially constructed process influenced by events, journalistic practices, and non-news actors' actions. However, they have not explicitly theorized the relationship among them. This study boosts the current understanding of how the public perceives climate change risks in a more nuanced way. Official institutions or organizations should be keenly aware of expressions and discussions on social media, and effective risk communication should focus on discussing topics that are significantly inconsistent across different identities and strive to mitigate misunderstanding while generating consensus on those topics. STM further exhibits unique strengths over the traditional topic modeling method in statistically testing the topic community and outlining the collective construction about risk topics in social media.

## **Submission ID**

2359

## **The Politics of Citizen Science**

### **Authors**

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### **Abstract**

1. The “participatory-turn” associated with “citizen science” (Irwin & Staff, 1995/2005) seems to bring the possibility of a new political promise. This is suggested by the proclamations of the end of the “deficit-model” in the relation between science and non-scientists. According to that model of science communication, the publics have knowledge deficits and the scientists know what is better for them. Citizen science would allow, in theory,

to produce a more balanced power relation between scientists and non-scientists because the latter are participating in the process of knowledge production instead of being mere receptors of scientific information.

2. However, the death of the deficit-model was probably exaggerated (Wynne, 2006). The majority of citizen science projects follow a 'taxonomic' style of participation (be it of plants, animals, galaxies, or digitalization of science archives). The citizen only uses his smartphone or computer to capture and/or categorize information according to a pre-determined taxonomic category. The participation tends to become "industrialized" (Vohland et al., 2019; Thorpe, 2010) because citizens repeat a set of predetermined gestures of data collection, and the computerized aggregation will result in an end-product that is inaccessible to citizens (e.g. a specialized scientific paper). The epistemic difference between Amazon's "mechanical turk" and, for instance, the citizen science app "*leafsnap*" becomes reduced once the algorithm controls if the participant is doing the correct or wrong classification.

3. This taxonomic style of citizen science can make the voluntary "participant" an 'underpaid worker' of science (Levina, 2010). The citizen's voluntary work is used for the benefit of financed scientists and scientific institutions that need to operate with large numbers. The large number of objects and events that the sciences have to register (Ellwood et al., 2015) spills over as opportunistic workforce demand of non-scientists. Citizens are not only integrated to make the scientific process more democratic but to fill a necessity caused by the incapacity of science itself to record and gather data. This situation can configure exploitation of the non-paid lay publics, which are reduced to mechanical tasks of labelling, recording, collecting, classifying, storing, copying, verifying, confirming, tracking.

4. The collective data gathered by laypeople is, according to the scientists, scientifically problematic (Tiago, Pereira, & Capinha, 2017) because the participants are not scientists. The contribution of the citizens has to be "statistically corrected" through a comparison of the bias and errors of laypeople with the correct interpretation of the scientists (Pocock & Evans, 2014). Two problems can be listed: 1) the collective comparison of personal bias ('subjectivity') that allows the construction of science collectively by scientists through the comparison of their common systematic bias (Popper, 1945/1947) is taken from the digital science citizen. We assist to a "bias-exploitation" of the citizens (similar to the Amazon mechanical turk) by the scientists that can learn with citizen's systematic bias but not the other way around. Lay participants can't produce a science *with* the scientists, only *for* the scientists, because they are a statistical control or a source of big data for a science of an elite and not a collective sharing of bias to co-produce a truly collective knowledge; 2) the generalization of the results of science is made possible only with the citizens work because they allow the production of a massive quantity of data sufficiently big to make it amenable to a statistical cleaning of its outliers to obtain a statistically normalized central value (Brennan et al., 2019). Paradoxically, the inclusion of non-scientists participants is

not translated in an inclusion of local knowledges in science, of different perspectives coming from outside of science, instead, the inclusion reduces their singularities through a statistical cleaning of their data.

## **Submission ID**

2366

# **Under what circumstances will people seek scientific information? A structural equation model of communication factors, AI risk-benefit perception and information seeking in China.**

## **Authors**

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## **Abstract**

Although artificial intelligence is proliferating in China, the Chinese public have limited knowledge and are both optimistic and fearful about AI (China Institute for Science and Technology Policy, 2018). Therefore, they need to seek information from different communication channels to cope with their ambivalence. This study aims to explore under what circumstances people will seek information to further their understanding of AI.

Previous risk communication studies posit that risk messages will lead to information seeking to cope with the unknown risk (Griffin et al., 1999). However, the public can perceive the risks and benefits simultaneously of emerging technology, and therefore the effect of risk and benefit perception on information seeking to cope with scientific matters should be considered. With this consideration, we proposed a hypothetical model indicating communication factors (traditional media use, new media use, and interpersonal discussion) shape people's risk and benefit perception of AI, which in turn activates information-seeking behaviors.

An online survey was conducted through a Chinese online research platform Sojump. Recruiting respondents from their national sampling pool, we received 746 valid questionnaires from 28 provinces or regions of mainland China. All variables were measured with a five-point scale. The frequency of new media use was measured from four channels, including WeChat, Weibo, online platforms, Internet, while the traditional from three: TV, newspaper, and movies. Interpersonal discussion frequency was measured from the aspect of friends, colleagues, and families. Risk perception and benefit perception were measured with a scale adapted from the previous scales (e.g., Binder, Andrew R et al., 2012; Priest, Susanna et al., 2010). Information-seeking behaviors were measured by users' seeking trying, seeking intuition, and time spent on seeking AI information.

To test our model, we performed structural equation modeling analyses, the model fit is ideal (CMIN/DF = 2.971, RMSEA = .051, GFI = .942, AGFI = .917, CFI = .958). All communication factors are directly correlated with information seeking. Specifically, new media use and interpersonal discussion have a positive direct effect on information seeking ( $\beta = .70, p < .05$ ;  $\beta = .22, p < .05$ ) while traditional media has a negative effect ( $\beta = -.28, p < .05$ ). As for the mediator of risk and benefit perception, surprisingly, the risk perception cannot mediate anyone of the relationship between communication factors and information seeking, but benefit perception mediates the relationship between traditional media use and information seeking, and the relationship between new media use and information seeking. Traditional media has a negative effect on benefit perception ( $\beta = -.45, p < .05$ ) and new media has a positive one ( $\beta = .68, p < .05$ ). Benefit perception is positively correlated with information seeking ( $\beta = .07, p < .05$ ).

This study explored two pathways for people in China to increase their information-seeking behaviors on AI. One is driven by the direct effect of new media and interpersonal discussion. This reflects the notion that most people are cognitive misers (Fiske & Taylor, 1991) and media provide shortcuts for them to better understand emerging technologies (e.g., Ho et al., 2013; Scheufele & Lewenstein, 2005). The other is that benefit perception is the mediator of traditional media use and information seeking. Though traditional media decrease peoples' information seeking behaviors, benefit perception can weaken the negative effect and make people seek information.

Overall, we found that compared with risk perception, Chinese are more interested in AI's positive perspective on their lives. One possible explanation is that AI's risk perceived by the Chinese is not as significant as to be intolerable (Frewer et al., 1998); thus, they tend to follow the media agenda mainly reflected the ideas of authoritative institutions. From the viewpoint of practical issues, the study implies that communication practitioners, scientists and policy makers should emphasize new media and interpersonal discussion as the channels to build dialogues with the public about AI. Meanwhile, they are also supposed to emphasize the benefits of AI to attract people's attention and interest in AI technology.

## Submission ID

2424

# Warming Up: Community radio, climate change and local communication

## Authors

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Ms. Anne Leitch - Griffith University

## Abstract

Warming Up is a collaborative project that aims to support Australian community radio stations by amplifying local stories of climate change, and building confidence and capacity to engage in meaningful community conversations. Beyond community 'voices', the project enlists Dreher and De Souza's (2021) idea of these stations as community 'listening posts' and thus local cultural resources that act as spaces for communities to engage with external groups as well as those within. In this sense, community radio stations present peerless opportunities for political leaders and policymakers at the forefront of climate action strategies to tap into community sentiment and experiences of climate change. This is essential if broad-scale climate policy and action is to be meaningful and locally appropriate.

A peculiar synergy around the idea of the 'local' exists between the communication characteristic of community radio and climate change communication. Climate change is experienced at the local level and it is well established that action on climate changes must be locally relevant. Warming Up seeks to leverage this shared ambition to nurture existing and expanded opportunities for community action and readiness. It also speaks to the relations between communicative justice and climate justice – to the politics of who speaks and who is heard by whom – and ways we might foster local listening and listening to the locals. After all, it is through listening that the value of voice is mutually recognised (Couldry, 2009). This is particularly important in community radio, which is often a space for groups marginalised from mainstream media and distant from climate discussions and decision-making.

This paper will explore the conceptual links between established community media scholarship and more recent climate change communication. Drawing on case studies from

Warming Up research thus far, this paper will present existing efforts of Australian community radio stations to facilitate community conversations about climate change. These findings highlight the ways that the Australian sector and its global contemporaries might capitalise on the role of community radio in building community resilience and, in doing so, challenge the traditional channels and approaches to mediated climate change communication.

## **Submission ID**

2438

# **Using interactive data visualization for science communication with low science literacy publics: A case study of the World's Ocean Litter Model**

## **Authors**

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## **Abstract**

Science communication is often touted as the solution to a widening gap between scientific knowledge and society's understanding and/or use of that information (e.g., Abraham, 2020; Burns et al., 2003; Matta, 2020). Further, interactive data visualizations (IDVs), which are widely used within the scientific community to translate robust scientific datasets into images, are sometimes employed as a communication tool with non-scientific audiences. Case studies allow for a robust understanding of the design process. Thus, focusing on one example (the World's Ocean Litter Model; <https://marinelitter.coaps.fsu.edu/>), this study seeks to understand the process of adapting an IDV for use as an educational or decision-making tool by non-scientific stakeholders.

The World's Ocean Litter Model was originally created by Chassignet et al. (2021) for the United Nations' Global Partnership on Marine Litter, a decision-making audience well-informed on the issue of the global marine litter problem. However, the development team's decision to expand the model's function as a science communication tool prompted interface revisions tailored to scientific and non-scientific target audiences alike.

A growing body of literature evidences the value (and potential drawbacks) of using IDVs to translate scientific and/or societal material for low science literacy publics. For example, a study by Perdana et al. (2018) found that IDVs can facilitate heuristic information

processing and increase task accuracy. This study was conducted to understand whether IDV can help improve the ability of non-professional investors to make sense of complex financial analyses. Another study by Gerst et al. (2020) identified problems associated with data visualizations that contribute to difficulties in processing climate outlooks and tested the efficacy of image modifications based on visualization analysis literature. The study found that “visual variable ambiguity is one of the most serious visualization problems because users might misinterpret or confuse one variable for another” (p. 128) and that the majority of respondents used color as their primary cue for interpretation. Another study by Phipps and Rowe (2010) found that culturally meaningful color representations and measurement scales can increase the efficacy of ocean data visualizations. And a study by Locoro et al. (2017) found that the perceived value of a data visualization is dependent upon its capacity to satisfy practical and contextual information needs.

Although user-centered, participatory design and formative research approaches are known to enhance product quality with regard to efficacy and user uptake and satisfaction (Abrams et al., 2004; Reigeluth & Frick, 1999), they are not always undertaken during the development phase. This examination of an IDV for the purpose of science communication with non-scientific audiences seeks to identify the development team’s key considerations, perceived challenges, and opportunities as they sought to make the World’s Ocean Litter Model’s data accessible, easily understood, and useful to non-scientific target audiences. The research also chronicles developers’ efforts to reduce information overload and looks at the role of stakeholder involvement (e.g., educators, policy makers, and the general public) during the development process.

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# **“Is It Really Green?”: The Impact of Greenwashing and Environmental Claims on Social Media**

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## Abstract

According to the *Top 10 Global Consumer Trends 2022*, sustainability is a renewed competitive advantage for corporations and eco-friendly products and services continue to drive consumers' attention and purchase behavior. To disclose companies' environmental practices and to promote their green images, many businesses used different communication approaches and strategic advertising plans. Due to social interactivity, flexibility, and openness, social media platforms have become major channels for corporate green advertising and crucial means for corporations to engage with consumers. However, many green advertisements on social media involve misleading and confusing truths that lack substantive information. By posing different pro-environmental claims on social media, this "greenwashing" phenomenon has harmful effects on both green consumers and the market.

Although businesses have various options for framing their green advertising messages, different types of environmental claims, as well as presenting different greenwashing types, previous studies typically focused on single-frame conditions. Additionally, only a few scholars considered the theoretical approach and the underlying mechanism in greenwashing on social media. To fill this gap, this research will apply the elaboration likelihood model (ELM) and use consumer environmental involvement as a mediator to explore how different types of environmental claims will influence consumers' perceptions of greenwashing and their evaluations of the brand.

The purpose of this study is to examine how different environmental claims and the claim deceptiveness influence consumers' perception and behavior intention in two different countries. It involves a 2 (environmental claims: product-related vs. process-related) × 2 (claim deceptiveness: vague vs. omission) × 2 (countries: USA vs. China) between-subjects design with a control condition (i.e., nondeceptive claim). By creating a fictitious brand Instagram account, both American and Chinese participants will be randomly assigned to one of the five experiment conditions and read the brand Instagram post. Participants will be asked to answer the questions related to their environmental involvement, perception of greenwashing, attitude toward the brand, and purchase intention.

The findings have implications for both scholars and businesses who are interested in promoting pro-environmental behaviors as well as the impacts of greenwashing on consumers. Theoretically, this research applied ELM to greenwashing on social media and tested the role of consumers' environmental involvement including their existing environmental knowledge and environmental concerns in their greenwashing perceptions and evaluations. Practically, the results will provide suggestions for marketers and businesses using social media more strategically and building their brand green image by providing more reliable and sufficient pro-environmental information.

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