

## **Exploring Media Representations of the Nexus between Climate Change and Crime in the United**

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## **Abstract**

Information on the criminal causes and effects of the climate crisis has the potential to shape public understanding of the problem, influence behavior(s), and prompt policy decisions. This article examines the mediated representation of climate change and crime in the United States to understand whether and how these issues are being portrayed. Using a content analysis of top online media stories in 2018, we found that there is a paucity of coverage on the nexus of climate change and crime. The few stories that did discuss the subject were often oversimplified and showed a lack of critical and informative coverage of the subject. Media coverage of climate change and crime needs more attention. This means that social scientists should dedicate more time to this research and to creating awareness around the climate change-social harm nexus. It also requires that social scientists are actively included in the discussions of the social effects of climate change.

## **Introduction**

Mass media plays a central role in the dissemination of information between scientists, policy makers, and civil society (Boykoff 2011; McNatt, Goodman, and Boykoff 2019). This is also true for mediated representations of crime (Brisman 2012b) and research in criminology shows that “climate change is intrinsically connected to criminological concerns” (Fussey and South 2012:37). This nexus between crime and climate change has the potential to shape public understanding of climate change, which can influence behaviors and prompt policy decisions. There is urgent need for sociological and criminological analyses of the climate crisis to complement that of science and economics (Agnew 2011a; Fussey and South 2012; Urry 2011). Brisman (2012b; Brisman and South 2014) and White and Heckenberg (2014) have called for the study of mediated representation of environmental harm and climate crisis to understand how these issues are being depicted, and this article begins to address this issue by examining whether and how the nexus between crime and climate change is represented in United States (US) online news media. This has been undertaken using a content analysis of US online media stories in 2018.

This article begins with some conceptual clarifications, followed by a review of the literature on the media coverage of climate change. From here, it turns to the impacts of crime on climate change, and the impacts of climate change on crime and conflict. The article then explains how the Media Cloud platform was used to conduct the content analysis. This is followed by a detailed analysis of how the climate change and crime nexus was discussed, identifying patterns and issues in media coverage.

## **Conceptual Clarifications**

### *“Global Warming” and “Climate Change”*

“Global warming” refers to the increase in average global temperatures. Global warming is contributing to anthropogenic climate change, resulting in warming in some areas and cooling in others, but with an overall increase in average global temperatures. Among scientists, it is widely agreed that the increase in Earth’s average temperatures since the mid-twentieth century is due to anthropogenic greenhouse gas (GHG) concentrations (Oreskes 2004; Schneider and Lane 2006; Sunga 2014). The elevated concentrations of

GHG in our atmosphere are a direct result of human activities, primarily due to the burning of fossil fuels that have polluted the environment. The temperature of the planet has increased by nearly one degree Celsius above pre-industrial levels and is predicted to continue to increase by 5 to 6 degrees Celsius by the end of the twenty-first century (Bloomfield 1992; Vermeer and Rahmstorf 2009). In 2018, the Intergovernmental Panel on Climate Change (IPCC 2018: vi), convened by the United Nations (UN), predicted that, “Without increased and urgent mitigation ambition in the coming years, leading to a sharp decline in GHG emissions by 2030, global warming will surpass 1.5°C in the following decades, leading to irreversible loss of the most fragile ecosystems, and crisis after crisis for the most vulnerable people and societies.” This dire prediction was reaffirmed in 2021 with the IPCC (2021: 41) stating that, “Global surface temperature will continue to increase until at least the mid-century under all emissions scenarios considered. Global warming of 1.5°C and 2°C will be exceeded during the 21<sup>st</sup> century unless deep reductions in CO<sub>2</sub> and other greenhouse gas emissions occur in the coming decades.”

“Climate change” refers to the long-term fluctuation in weather patterns. While some climate change is natural, “anthropogenic climate change” refers to shifts due to human activities (i.e., global warming caused by increased GHG emissions). Climate change is predicted to create a series of crises that include the increased severity and frequency of natural disasters (such as hurricanes), changes in precipitation patterns bringing more frequent droughts in some areas while increasing precipitation in others, longer and hotter heat waves, and the melting of glacial and land ice, contributing to rising sea levels (White 2012). Despite indisputable scientific evidence and near-unanimous scientific consensus, existing institutions and political systems have been unable to produce the kind of changes needed to address the crisis.

### *Crime, Harm, and the Environment*

Although much of mainstream criminology relies on legal definitions of crime to frame research and debate, this approach has been inadequate when dealing with corporate crime, crimes of globalization, crimes of the powerful, state crime, state-corporate crimes, and white-collar crime, as well as environmental crime (Friedrichs 2015; Michalowski and Kramer 2006; Rothe and Friedrichs 2015; Rothe and Kauzlarich 2016;

White 2008). The legalistic construction of the concept of crime is bound by a geographic, historical and state-defined context, which excludes whole categories of blameworthy harms (Agnew 2011a; Friedrichs 2015; Hagan 2010; Michalowski and Kramer 2006). The result is an “inverted criminology,” so to speak, where behaviors that have the most harmful social impact receive the least attention (Friedrichs 2015). For the purposes of this article, we conceptualize crime more broadly to include avoidable and unnecessary harm to society, which is serious enough to warrant intervention (Passas 2005).

Environmental crime research suffers from a similar inverted representation as current laws fall short of protecting the environment (Nurse 2016; South 2007). Legal definitions of environmental crime do not incorporate the full gambit of destructive activities. Because states and powerful corporations are prime perpetrators of ecological destruction due to their exploitation and commodification of the Earth, it is necessary to move beyond narrow, state-defined standards for what is considered an “environmental crime” (Halsey 2004). Criminologists play a crucial role in defining climate change as a crime and in “the development of a social praxis for climate change justice” (White and Kramer 2015:383).

Green criminology is a framework that looks at the “primary and secondary harms, offences, and crimes that impact in a damaging way on the natural environment, diverse species (human and non-human), and the planet” (Ruggiero and South 2013:360). Green criminology points to the role of corporations in collusion with governments in causing and failing to control the climate crisis (Agnew 2012; Klein 2015; Kramer 2020; Lynch, Burns, and Stretesky 2010; McNall 2011; White 2018). Criminological concern over the climate crisis is centered on the “responsibility [of] the most polluting and damaging industries and countries to make right the wrongs which they have contributed through their actions” (White 2012:3). Therefore, in this article, the more capacious term, “environmental harm,” will be used instead of “environmental crime” to refer to environmental destruction and devastation that includes both legally defined crimes against nature and blameworthy environmental harms that are not captured by the law.

## **Climate Change and the Media**

Mass media plays a crucial role in the social construction of crime, in general, and environmental harm, more specifically (Brisman 2012b; Ferrell 2009). The media has the power to frame, filter, and interpret messages about the climate crisis (Hulme 2009). In this article, we focus on the role of news media, which represents only one part of the larger media landscape.

Although the first known article written in the English-speaking mainstream news on climate change dates back to 1912 in New Zealand (Revkin 2016) and to 1930s in the US (Boykoff and Roberts 2007), climate change was not covered in any meaningful way until 1988. That year, the hottest summer on record in the US, Dr. James E. Hansen, the Director of the Goddard Institute for Space Studies at the time, testified before the US Congress that it was 99 percent certain that global warming was being caused by human activities (Boykoff and Roberts 2007). Although climate change received more meaningful coverage after Hansen’s testimony, by the 1990s, reporting of climate change was already becoming politicized with increased attention given to climate change contrarians, which deflected and reduced the concern over the crisis (Brisman 2012b; Gelbspan 1998). This trend has continued, and in the period from 2010 to 2019, the number of stories about climate change in traditional news media declined in comparison to digital and social media (McNatt, Goodman and Boykoff 2019). The decline is attributed to the changing landscape of media outlets (smaller newsrooms and larger focus on online platforms) and to increasingly partisan editorial decisions (Gilens and Hertzman 2000; McNatt, Goodman and Boykoff 2019; see also Fitts 2013). In addition, giant media corporations have gradually acquired news outlets, shifting their goals from providing information to generating profits through entertainment (Thussu 2007).

The result has been that climate change has not been covered as a scientific fact or phenomenon but as an issue of or for political debate. Gavin (2009: 769) found that in the United Kingdom (UK) most of the climate change coverage took place “in the broadsheet newspapers—predominantly in the left-liberal titles.” Media outlets have been focused on a “balanced” coverage of climate change, presenting scientific knowledge on par with contrarians and deniers (Boykoff and Boykoff 2004). In the US, “prestige press”<sup>1</sup>

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<sup>1</sup> This includes the *Los Angeles Times*, *The New York Times*, *The Wall Street Journal*, and *The Washington Post* (Boykoff & Boykoff 2004).

articles published in 1988 and through the 1990s were found citing more climate change contrarians than scientists (Boykoff and Roberts 2007). Such notions of “balanced” coverage generate doubt about the extent, nature and scope of climate change and the effects it will have on human life. As a result, perceptions about the negative effects of the use of fossil fuels on climate change have reduced from 71 percent in 2007 to 44 percent in 2011 in the US (Klein 2019). The issue has remained highly polarized in the US, with a majority of Democrats (83%), just over half of Independents (56%), but only about one in five Republicans (22%) believing that global warming should be a very high or high priority for the president and Congress (Leiserowitz et. al. 2020).

Although there is debate as to whether mass media coverage of a social or environmental problem galvanizes legislative action, there is no doubt that media attention puts social and environmental problems in the public sphere (McNatt, Goodman, and Boykoff 2019; Brisman, 2020). Once information enters the public sphere, it allows social problems to be framed, which can then shape public attitudes towards the issue (Boykoff and Roberts, 2007; Gavin 2009; Shehata and Hopmann 2012). Institutions, such as the [George Mason University Center for Climate Change Communication](https://www.climatechangecommunication.org) (<https://www.climatechangecommunication.org>) and [Yale Climate Connections](https://yaleclimateconnections.org) (<https://yaleclimateconnections.org>)—an initiative of the Yale Center for Environmental Communication—have begun to address these issues by consolidating social science research on climate change to support meteorologists and journalists reporting on climate impacts. More recently, projects, such as the [Covering Climate Now](https://www.coveringclimatenow.org) (<https://www.coveringclimatenow.org>), a journalism-led commitment to better coverage of climate change, are built on the recognition of the power of media in framing the existential issues of climate change. When the media does not frame the issue of climate change as a crisis, or when it portrays competing conceptions of the nature and extent of human responsibility for climate change, the outcome can have a marked effect on the attitudes of the general public and politicians (Mazzoleni and Schulz 1999).

Research has identified that societal risk perception of climate change has been normalized in countries with higher levels of carbon dioxide emissions (Luis, Vauclair, and Lima 2018). This

normalization effect occurs despite increased awareness of climate change in these countries (Luis, Vauclair, and Lima 2018; Brisman 2020). Norgaard (2009) explains that awareness of climate change is not sufficient to stimulate environmental concern and that misinformation and denial contribute to the problem. Environmental concern is crucial and can translate into pro-active behavior if the necessary and honest information on environmental problems is available (Norgaard 2009; Takacs-Santa 2007). Without adequate information, people are likely to feel less of a sense of obligation to act in response to the problem (see Agnew 2012).

Finally, media has a dual role—an agenda-setting function and a duty to spotlight government performance (Gavin 2009). In democracies, the media serves a crucial purpose in holding officials accountable for their actions and inactions (Camaj 2013). The media has the ability to reach a diverse audience in an objective manner to stimulate action (Brisman 2010). The lack of effective media coverage of the climate crisis is particularly worrisome when politicians feel unable to advocate for policies to mitigate climate change due to fears that such news coverage may have a negative impact on future voting behavior (Bennett 2016). The media, therefore, plays a vital part in both the diagnosis and the prognosis of climate change. The media also provides the conduit for informing the population about the causes of global warming and for helping to elaborate the risks posed to society by the resulting climatic changes. Crime is an important part of understanding the impacts and effects of climate change.

### **The Impacts of Crime on Climate Change**

State-corporate crimes are perpetrated by corporate entities and institutions of political governance that together produce illegal or socially injurious acts (Michalowski and Kramer 2006). The “state-corporate crime” label identifies how the relational networks of power enable deviant behavior while simultaneously insulating influential actors from apprehension and prosecution (Kramer 2013; Lynch, Burns, and Stretesky 2010). This framework highlights the ways in which law and justice are not products of a participatory democracy whereby all voices take part and have equal value, and it underscores how states maintain an “illusion of neutrality, impartiality, and plurality . . . sustaining this through



implementation of basic safeguards for individual human rights, baseline welfare and educational provision, democratic elections and environmental protection” (White and Kramer 2015: 385). Instead, the interests and worldview of the “investor class and their political allies continue to exert a disproportionate influence over the content and application of the law” (Kramer, Michalowski, and Kauzlarich 2002: 267).

Corporate and political actors have engaged in activities, such as deforestation, industrial pollution, and land clearance, without any concern for the environment. Over a century of these reckless activities have created heat trapping GHGs, destroyed habitats, reduced biomass, and devastated entire ecosystems. Corporations, in collusion with governments, have caused and failed to address climate change (Goldberg et. al. 2020). Harmful behaviors have not abated with the growth of knowledge of their damaging effects; instead, we have witnessed denial and misinformation. Critically, this process is not the result of the deviance of a few “bad apples” in positions of power or the transgressions of isolated institutional actors, but the product of a complex system of powerful relationships (Fussey and South 2012; Kramer 2020).

Behaviors that constitute blameworthy harms that have led to global warming and climate change have been labeled by Kramer (2020) as climate crimes. Climate crimes are state-corporate crimes that include “(1) crimes of continuing extraction and emission; (2) crimes of denial; (3) crimes of political omission; and (4) crimes of unjust and militaristic adaptation” (Kramer and Bradshaw 2020:171). Here we discuss the first three forms as impacts of crime on climate change in the forms of unabated GHG emissions and related political omission as well as campaigns of disinformation and inaction. The final type listed by Kramer is a criminal response to climate change discussed later.

### *Unabated GHG Emissions*

The scientific evidence of anthropogenic climate change means that nation-states and the international community should respond decisively to mitigate and adapt to the problem (Giddens 2011). Early industrialized countries, such as the UK and the US, have emitted more GHGs into the atmosphere cumulatively than more recent polluters, such as China and India (Kramer 2020). The US, which has emitted more cumulative global carbon dioxide emissions historically than any other nation, is positioned

to make a major difference in climate change mitigation (Cullen 2010; Lynch, Burns, and Stretesky 2010). So far, however, it has done little at the national or international level (Giddens 2011). Rather than questioning the implicit destructive nature of economic activities, such as the burning of fossil fuels, state and corporate actors in the US have increased emissions and resorted to dirtier and more extreme extraction methods (Kramer 2020). The corporate capitalist system, described as predatory in nature, is protected by the apparatus of the state and a culture of growth, production, and consumption (Foster 2013).

In the US, the government has a vested interest in the growth of its economy, “which is needed for it to maintain its legitimacy and political and military power. As such, corporations, their growth and profits, are a primary concern” (Rothe and Kauzlarich 2016:67). Nation-states are also the primary purchasers of goods and service produced in the private sector. Together, nation-states and corporations have a symbiotic relationship which stimulates a free market that is unfettered by regulatory controls which subordinates social and ecological considerations. Research looking at the contributions made to the campaigns of members of Congress in the US reveal that votes against environmental policies yield more financial support from oil and gas companies (Goldberg et al. 2020). These fossil fuel contributions have a major effect on stalling climate action—especially when renewable energy is outspent by fossil fuel interests thirteen to one (Kirk 2020).

The global political economy is a key part of the climate change problem (Foster 2013; White 2013). Kramer (2013, 2020) has suggested that “growth fetishism”—the endless pursuit of economic growth—and a culture of consumption and production has accelerated global warming. In the face of global warming, free market solutions have been focused on technological advancement and on establishing an environment-security nexus rather than a rethinking of the existing model of neoliberal economic ideology (Foster 2013; McClanahan and Brisman 2015). This emphasis on endless growth has created huge wealth disparities, increased relative deprivation, and created a culture of unapologetic exploitation of natural resources (Ruggiero and South 2013). Moreover, the neoliberal emphasis on consumerism, consumption, and endless production has fostered a culture that is fundamentally criminogenic (Passas 2000). Within this nexus of culture, economics and politics, environmentally harmful behavior has become normalized

(Michalowski 2010). The result is enduring support for a political economy that requires endless consumption and growth—one that is fundamentally at odds with the urgency of the climate emergency (Di Chiro 2019; Fussey and South 2012; Kramer 2013).

### *Campaign of Disinformation and Inaction*

A critical problem of addressing climate change has been the lag between cause and effect that makes it uniquely difficult to mobilize political will to address the problem (White 2012). The “slow violence” of climate change does not garner public attention the way more immediate threats do (Nixon 2013). Indeed, as Weber (2006:103) puts it, “[t]he time-delayed, abstract, and often statistical nature of the risks of global warming does not evoke strong visceral reactions.” This lag has been reinforced by doubt and misrepresentation of the causes and effects of climate change.

Uncertainty has been fabricated “about the basic conclusion of a demonstrable anthropogenic fingerprint of climate change” (Skolnikoff 1999:18), about the consequences of climate change, and about the best way to respond to it. The presence of doubt, although misplaced given the increasing amount of scientific evidence on the subject, advances the agenda of fossil fuel industries and carbon intense corporations (Kramer 2020). Uncertainty has become a highly calculated and coordinated endeavor that has been facilitated by governments and the media to serve corporate interests.

The intentional creation of uncertainty is not a new phenomenon (Diethelm and McKee 2009). In the early 1960s, the tobacco industry knew about the causal link between smoking and lung cancer. Concerned that public awareness of the problem would dramatically affect sales, a sophisticated public relations campaign was undertaken to create doubt and uncertainty around the emerging science on the subject (Brandt 2007). The effect was a forty-year delay in regulating tobacco products with immunity for tobacco corporations from litigation (Bates and Rowell 2004). Similar practices have been documented for hog farm emissions, lead poisoning, and corporate authorship of research articles on various pharmaceuticals (Union of Concerned Scientists 2012). GHG-emitting industries benefit from a comparable situation. Creating doubt about the causal link between the burning of fossil fuels and climate change has allowed carbon intense industries to avoid regulation and to act with impunity (Oreskes and

Conway 2010). The active spread of disinformation has created a dangerous narrative that climate change is created by natural causes, suggesting that inaction is appropriate and that action would be harmful to the economy (Mulvey and Shulman 2015). Moreover, through the disinformation campaigns climate scientists and environmentalists have been constructed as “folk devils” and attention to climate change has been treated as a moral panic (Brisman and South 2015). This form of corruption has allowed corporations to produce irreversible damage to the planet.

Scientific knowledge requires protection from suppression by those in positions of power and authority (Kuehn 2004). The role of media coverage is critical in raising the issue of climate change as a significant public concern (Brisman 2012b). Pursuing journalistic balance when the scientific evidence of climate change is substantial feeds deliberate campaigns to create doubt and uncertainty around the science of climate change (Boykoff and Boykoff 2004; Boykoff and Roberts 2007). Moreover, and as suggested above, “conservative reactions have constructed concern about climate change as a moral panic and assigned the folk devil label to those who support mainstream climate science” (Brisman and South 2015:457), thereby reducing impetus to make individual and collective change. What some have dubbed the “Fox News Effect” creates partisan polarization around issues of climate change and actions necessary to curb the looming crisis (Gustafson et al. 2019). The media’s role should be to amplify the voice of science rather than obfuscate scientific fact with political noise. As the mass media has become dominated increasingly by giant corporations that are bound to a political economy of private enterprise capitalism and consumerism, the noise has muted climate change discourse in the US (Gurevitch and Blumler 1990). Such corporate-friendly propaganda has legitimated and normalized behaviors and narratives of GHG-emitting industries that dispute climate science (Kramer 2013). The result is tension between the democratic ideals of media and the realities of the practice which has inhibited an accurate representation of scientific knowledge on climate change.

### **The Impacts of Climate Change on Crime and Conflict**

Schneider and Lane (2006:11) describe how climate change will produce:

more frequent heatwaves (and less frequent cold spells); more intense storms (hurricanes, tropical cyclones etc.) and a surge in weather related damage; increased intensity of floods and draughts; warmer surface temperatures, especially at higher latitudes; more rapid spread of disease; loss of farming productivity in many regions and/or movement of farming to other regions, most at higher latitudes; rising sea levels, which could inundate coastal areas and small island nations; and species extinction and loss of biodiversity.

Existing theories and behavior patterns have been used to predict how these climate effects can become a source of crime and social harm, at the individual, group, corporate, and state levels.

At an individual level, it has been suggested that levels of violence increase in places with higher temperatures and unpredictable climates, particularly in poorer countries (IPCC 2018; Wachholz 2007). While the warming climate is predicted to create an uptick in street crime and interpersonal violence, including assault, domestic violence, murder, and rape (Akresh 2016), the causality between climate change and crime at an individual level remains a complex and contested subject. Some have suggested that criminal behavior is caused by the psychological effects of heat induced irritability (Rotton and Cohn 2004; van Lange, Rinderu, and Bushman 2018); others have cautioned against drawing such linkages that may oversimplify a complex subject and represent a modern form of environmental determinism that neglects local, political, and social contexts (Raleigh, Linke, and O'Loughlin 2014). Nevertheless, there is concern that environmental changes increase zoonotic diseases (Bartlow et al. 2019). These, in turn, can trigger large scale government responses, such as national lockdowns during the SARS-CoV-2 pandemic, that have been associated with a higher incidence of domestic violence (Boserup, McKenney, and Elkbuli 2020). Another approach—one adopting a routine activities perspective—has predicted that crime rates will increase in hotter and more variable climates due to increased opportunities (Goin, Rudolph, and Ahern 2017; Rotton and Cohn 2003). Agnew (2011b) explains that the effect of climate change on crime can be attributed to a combination of factors. These include increased levels of strain, reduced social control, weakened social support for those in need, growth in beliefs favorable to crime, and increased opportunity for crime.

More robust explanations of the impact of climate change have examined the effects of economic inequality and marginalization. Inequality and marginalization impact the way a person experiences events

in all areas of life; climate change will exacerbate this with an enhanced “climate divide” where those that have contributed the least to the climate crisis are those most impacted (Fussey and South 2012; Raleigh 2010; Brisman, South, and Walters 2018) Marginalized communities will be more vulnerable to the impacts of climate change, especially in societies that are deeply stratified (Fussey and South 2012; Kramer 2013; Simon 2000). Social control mechanisms that already predominantly punish the powerless and those at the margins of society will be aggravated. In the growing climate emergency, more punitive societies will have even less tolerance for minor criminal behavior caused by desperation (Fussey and South 2012).

Research on the effects of climate change on intergroup conflict has been controversial. The suggestion is that when high levels of marginalization are coupled with the stress of climate change, the existing, intergroup conflicts can be aggravated or new intergroup conflicts can emerge (Agnew 2011b; Akresh 2016; van Lange, Rinderu, and Bushman 2018). Some consider climate change to be a “threat multiplier” for conflict (Huntjens and Nachbar 2015). Raleigh and Kniveton (2012) argue that the climate change and conflict relationship is complex, and that force and violence can be triggered indirectly by resource scarcity (in the form of competition over scarce resources), but that it can also be triggered by resource abundance (through rent-seeking and wealth-seeking behaviors). Moreover, research on social effects of disasters and hardship in the Global South has shown that scarcity triggers higher levels of cooperation, even among competitors (Raleigh, Linke, and O’Loughlin 2014). Thus, there is danger in oversimplifying the climate change and conflict nexus.

In the process of understanding the consequences of climate change, the causes of conflict should not be de-politicized (Raleigh, Linke, and O’Loughlin 2014). In Darfur, Sudan, desertification and famine produced by climate change reduced supplies for land and water, which increased competition for resources. When this was coupled with socially constructed ethnic divisions, it contributed to the rise of the violent conflict and the resulting genocide (Gleditsch 2015; Hagan and Kaiser 2011; Sunga 2014). Essentially, climate change, *by itself*, does not bring about conflict, but its effects, in combination with certain economic and political conditions, can exacerbate or create tensions and conflict (Raleigh, Linke,

and O’Loughlin 2014). Moreover, conflict creates increased vulnerabilities to climate change and intensifies (other forms of) environmental degradation (Brisman, South, and White 2015; Gleditsch 2015; Scheffran et al. 2012).

Exposure to conflict leaves communities poorer, less resilient, and less able to cope with the consequences of the climate crisis (White 2018). This is mediated by economic assets, government policies, political relationships, and social position (Raleigh and Jordan 2010). One of the responses to the climate crisis is predicted to be an intensification of labor migration patterns both within and between countries. These will include various forms of migration, from short-term relocations to nearby areas to mass displacements of entire communities, creating what some have termed “climate refugees” (Agnew 2011b; Brisman, South, & Walters 2018; Raleigh and Jordan 2010; Scheffran et al. 2012). Such population dislocations are predicted to produce a strain on infrastructure and aggravate resource scarcity (Fussey and South 2012; van Lange, Rinderu, and Bushman 2018). Climate refugees and local inhabitants are at an increased risk of conflict when the influx is coupled with politically divisive communication.

The effect of climate change on corporate crime is already visible. It entails—and will continue to include—further GHG emissions, corruption, and other forms of environmental degradation (Agnew 2011b). New market-based schemes (such as carbon taxes, carbon trading, and product greenwashing) will be added to current practices to adapt to the new normal (Di Chiro 2019; Fussey and South 2012). Corporate-sponsored and state-facilitated climate contrarianism is expected to continue (Agnew 2012; Brisman 2012a). Indeed, the culture of denial will encompass not only emerging scientific knowledge, but coverups of complicity and blameworthiness in natural disasters and environmental “accidents.” Such behaviors have been documented in the aftermath of the Deepwater Horizon oil spill (Bradshaw 2015) and in the Fukushima nuclear power plant failure (Takemura 2012).

Climate change is also expected to generate new state aggressions that violate human rights, including crimes against humanity and genocide (Agnew 2011b; Akresh 2016; Sunga 2014). Competition over land was one factor leading to the 1994 genocide in Rwanda (Sunga 2014). State crimes that are not defined as international crimes (under the Rome Statute of the International Criminal Court of 1988, Article

5) have also occurred. For example, the US's involvement in the Persian Gulf was undertaken in order to ensure unimpeded access to Iraqi oil reserves for American corporations (Green and Ward 2004; Kramer and Michalowski 2011). Kramer and Bradshaw refer to this as “crimes of unjust and militaristic adaptation” (2020:173), where the response to climate change includes an escalation of militarization, social exclusion, repression, policing, and killing.

Despite evidence from the social sciences, issues of climate change and crime are not often viewed in connection to one another. Although more research is needed, these initial insights are important factors for understanding the effects of climate change on society. Ultimately, policies dealing with climate change need to address the root causes of climate change, rather than managing symptoms. This can happen only when there is adequate and holistic publicly available information on the subject.

As noted above, in a democracy, the media informs the public on a wide range of issues and helps hold governments accountable (Gurevitch and Blumler 1990). It is “important, therefore, to examine some of the ways in which media reporting of environmental issues takes place” (White and Heckenberg 2014:63) in order to identify if issues are constructed and documented adequately to stimulate public concern and prompt pressure on politicians to bring about legislative change.

## **Methods**

This content analysis examined representations of climate change and crime in US online media in 2018.

Two research questions guided the study:

1. Is a nexus between climate change and crime represented in US online news?
2. If so, how is the nexus between climate change and crime represented in US online news?

To identify the pool of stories and to parse out relevant stories, we employed a web-based, open-source data platform called Media Cloud (<https://mediacloud.org>). Media Cloud collects and archives news content published online from over 50,000 digital media sources. We deemed online news media to be an



appropriate unit of observation for this project because of the growing consumption of online news. In the US, access to the news is equally distributed between web-based and television sources (Pew 2019).

The *US Top Online News* collection is a Media Cloud-curated compilation of the top news websites of 2017. The sources were identified using three ratings agencies (Activate, Alexa, comScore) that measure audience size across media ecosystems. The list and rank of top US sites is relatively consistent across ratings agencies (Olmstead, Mitchell, and Rosenstiel 2011). This collection includes both “legacy news organizations”—also known as “old media” or “1900 media”—news organizations that existed before the Information Age and were not created online) that communicate through other platforms, such as television or print, and online-only sites. The collection includes thirty-two media sources across the political spectrum.<sup>2</sup>

In the pre-analysis stage of the study, we searched for various terms to identify the most appropriate word to help us locate articles. In particular, we searched for articles with the words “climate change,” “global warming,” and “greenhouse gases.” “Climate change” appeared more often than the other two. We also searched for the words “crime,” “delinquency,” “deviance,” and “social harm.” “Crime” appeared the most frequently.

We examined trends for both of the chosen keywords over the past five years.<sup>3</sup> Table 1 shows that mentions of the term “climate change” peaked in 2015 and in 2017, dipping to a four-year low in 2018. This is in line with reports of the downward trend in the coverage of climate change in the US (McNatt, Goodman, and Boykoff 2019). Table 2 reveals that the term “crime” was mentioned more frequently over

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<sup>2</sup> These include *The Atlantic*, *The Blaze*, Bloomberg, Breitbart News Network, Business Insider, BuzzFeed, CBS News, CNBC, CNN, The Daily Caller, Daily News, the Drudge Report, Forbes, FOX News, *The Guardian* (United States edition), *HuffPost*, *The Los Angeles Times*, NBC News, *The New York Times*, *The New Yorker*, Newsmax, Politico, Reuters, Time, *USA Today*, Vox, *The Wall Street Journal*, The Wall Street Journal Blog, *The Washington Post*, Yahoo! Finance, and Yahoo! News.

<sup>3</sup> These pre-analyses did not include a study of the content of the stories identified and it is likely that these stories included false positives. The intent was to obtain a baseline understanding for the best term to use to capture the largest number of relevant stories and it was assumed that the margin of error would be relatively consistent across years.

the same period; the word “crime” is featured roughly twice as often in the media collection. The coverage of the topic peaked in 2015 and fell to four-year low in 2018.

**Table 1: Occurrence of Keyword “Climate Change” in the *US Top Online News Collection***

<b>Year</b>	<b>Number of Mentions</b>
2014	17,865
2015	32,569
2016	26,326
2017	31,376
2018	19,075

Source: Media Cloud

**Table 2: Occurrence of Keyword “Crime” in the *US Top Online News Collection***

<b>Year</b>	<b>Number of Mentions</b>
2014	45,976
2015	62,735
2016	61,241
2017	58,545
2018	49,398

Source: Media Cloud

To understand whether and how the media represents climate change and its nexus to crime, the keywords “climate change” and “crime” were searched for together in the second stage of this research. The search analyzed a total of 1,621,175 stories covered in *US Top Online News* between January 1, 2018, and December 31, 2018. A total of 712 stories (.04 percent) of all top online news stories in 2018 were flagged as including both keywords. Media Cloud provided the URLs for the stories, which were

downloaded, catalogued, and analyzed for content. Two researchers coded the stories and to ensure coding reliability, their individual results were then compared and discussed to ensure consistency.

## **Findings**

Our examination of these 712 stories found that a majority of the stories were not describing a connection between climate change and crime. A total of 618 stories listed the keywords as distinct topics in a story. There were three categories of false positives. Some stories were aggregating summaries of the top stories of the day. Other stories were about one keyword (e.g., “climate change”) and the second keyword (e.g., “crime”) was not part of the same story but was featured in an advertisement for a different story that was showing on the same webpage. There were also stories that featured one keyword (e.g., “crime”), but the author’s biography mentioned that that person also wrote about the other keyword (e.g., “climate change”). Finally, several stories appeared more than once. An additional eighty stories did not include both keywords and seemed to have been identified in error. Re-running the analysis on different days provided insight into the reason for this error. The error came from stories where one keyword was featured in an advertisement for another story, however, these advertisements change daily and when the story was revisited for coding the second story had changed.

Only fourteen stories (.00086 percent) in 2018 discussed crime and climate change together across the top thirty-two US online news sites (Appendix A). The majority (twelve out of fourteen) were reported in the second half of 2018, suggesting a possible uptick in such coverage. The majority of the stories were featured in “left-center/left-leaning” or “left” outlets, one in a “centrist/least bias” outlet, and two in “right

biased/questionable sources.”<sup>4</sup> *The Guardian* stood out with four of the fourteen stories in the group; next was *CNN* with two.

Only four of the fourteen stories discussed the causes of climate change as “criminal.” Two articles suggested that climate change is a crime against humanity. Story 1, an opinion piece from *The Guardian*, suggested that the then-Administrator of the Environmental Protection Agency (EPA), Scott Pruitt, was guilty of crimes against humanity. The author blamed Pruitt for a failure to accept scientific research and the deregulation of the environment that was “hastening our fragile environment toward the point of no return, all for short-term gain for himself and his rich and powerful industry buddies” (Story 1). Story 5, authored by economist Jeffrey Sachs, was also an opinion piece that defined anthropogenic climate change as a crime against humanity. Sachs argued that those responsible need to be held accountable for their actions in creating the climate crisis. The article flagged both the causes of climate change and the failure to respond adequately to the resulting disasters as criminal. Story 12, from *BuzzFeed*, discussed the link between climate change and crime more narrowly by focusing on deforestation in Brazil. In the piece, the author blamed both organized criminal groups and the government that rolled back regulations to protect the rainforest.

The fourth story in this group, Story 11, was an extended piece by Bill McKibben in *The New Yorker* that discussed climate change denial and the responsibility of those in power. The piece did not mention explicitly that crime caused climate change, but it did elaborate on the myriad behaviors of those in positions of corporate and political power that created the problem:

It’s by no means clear whether Exxon’s deception and obfuscation are illegal. ... What is certain is that the industry’s campaign cost us the efforts of the human generation that might have made the crucial difference in the climate fight...The mystery that historians will have to unravel is what went so wrong in our governance and our culture that we have done, essentially, nothing to stand up to the fossil-fuel industry.

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<sup>4</sup> Political leanings were assessed based on two media bias ratings of online content—the AllSides media ratings (<https://www.allsides.com/media-bias/media-bias-ratings>) and Media Bias Fact Check (<https://mediabiasfactcheck.com>). The labels used here are ones used by the two ratings providers.

Alex Steffen, an environmental writer, coined the term “predatory delay” to describe “the blocking or slowing of needed change, in order to make money of unsustainable, unjust systems in the meantime.” The behavior of the oil companies, which have pulled off perhaps the most consequential deception in mankind’s history, is a prime example.

Story 11 was unique because beyond placing blame for the climate crisis on corporate and state behavior, McKibben also discussed the effect of climate change on society. He explained that the “shrinking of the planet”—the reduction in habitable areas due to rising sea levels, increased heat, and resource scarcity—will impact the vulnerable who will be forced to migrate at increasing rates and who may be exploited in the process.

Ten other stories suggested a similar link between climate change and crime. Three of the stories (Stories 7, 8 and 9) discussed the Central American migrant crisis, which was a major news item of the time. Stories 7 (*The Guardian*) and 9 (*CNN*) both focused on the effects of climate change on crop yield, arguing that these were a crucial factor in creating the migrant crisis. “Climate change is bringing more extreme and unpredictable weather to the region.... As a result, more than 3 million people have struggled to feed themselves” (Story 7). Story 9 makes the same argument by providing useful visuals (photographs and graphs). Both stories (Story 7 and Story 9) suggest that a focus on violence and crime has obfuscated the impact of climate change on the crisis.

Story 8, from the *Daily Caller*, also discussed the migrant crisis and climate change. This one, however, was written in a tone criticizing various media sources for suggesting the link stating, “Conflict scholars have largely debunked many of the claims linking global warming to armed conflict and migration, but the media is trying to continue the narrative by linking global warming to Central American migrations” (Story 8). The story has an embedded link to another story by the same news site which cites a lecture by Professor Clionadh Raleigh of the University of Sussex. Raleigh is cited for the proposition that “global warming is not causing conflicts to break out in the developing world” (Story 8).

On the subject of conflict and climate change, Stories 3 and 13 discussed the relationship between resource scarcity, conflict, and terrorism, albeit in different ways. Story 3, from *Breitbart*, quoted US Senator Kristen Gillibrand (D-NY) and Thomas Waldhauser, a US Marine Corps general and former Commander of the United States African Command, for the proposition that climate change is increasing

conflict and terrorism in Africa. Story 13, from *The Atlantic*, was a longer piece on how climate change continues to put pressure on resources, forcing individuals to migrate, and making civil unrest and criminal behavior more likely. *The Atlantic* article made a strong case for the effect of climate change on societies by looking at the impact on rural regions of the world.

The five remaining stories discussed a link between the rise in temperature and an increase in crime, suicides, and violence using very different approaches. Story 14, from the *Associated Press*, critiqued the Trump Administration's lack of funding for climate science and investment in fossil fuels, stating, "Hot weather promotes the spread of infectious diseases, reduces work capacity, increases rates of violent crime, reduces agricultural production, and worsens air quality" (Story 14). The story did not provide any explanation of the proposed relationship. Story 4, from *The New York Times*, suggested changes in routine activities as the explanation for the increased rate of gun crimes with hotter temperatures. Although it noted that an increase in irritability and anger had been identified by some as a cause, it acknowledged that such arguments had been controversial. Story 10, from *The Guardian*, made a similar argument about a link between crime and higher temperature using routine activities theory but with reference to warmer winters. The story made a point of discrediting the temperature-aggression correlation hypothesis. Story 6, also from *The Guardian*, looked at the link between heat and the rising rates of suicide as an indicator of human hardship. The association was mediated by the damage caused by heat to crops, and the reference in the article to crime came from a mention of research by the University of Chicago Climate Impact Lab, which has been investigating whether crime levels are connected to monsoon seasons. Finally, Story 2 from *CNBC*, looked at one recent academic article that suggested that heat makes law enforcement more lethargic and therefore less effective, increasing the number of fatal car crashes, and reducing the number of health inspections of restaurants.

## **Discussion**

In response to the first research question, the *US Top Online News Collection* of 2018 showed that there were only a very small number of stories that considered the subject of climate change and crime together:

14 of 1,621,175 stories (.00086 percent). The results were disappointing but not surprising considering that only 1.18 percent of the *US Top Online News Collection* stories in 2018 covered the subject of climate change. It was also interesting, although also not surprising, to find that most stories on climate change were found in “left-center/left-leaning” or “left” sources, supporting Gavin’s (2009) suggestion that climate change is framed as a left-liberal issue rather than a matter of universal concern.

In response to the second research question, our analysis of the stories provided some compelling insights into how the media frames discussions of climate change and crime. Only four stories discussed the criminal causes of climate change, however, and two of these were opinion pieces (Stories 1 and 5). Of the two other pieces, one discussed a single type of criminal act (Story 12), and the other (Story 11) highlighted the state-corporate culpability for continued GHG emissions and climate change denial, falling just shy of describing such behavior as criminal. The arguments made were very similar to those of Kramer (2013), Lynch and Stretesky (2010), and White (2012). This story was also unique because it took a holistic approach, discussing the social effects of climate change.

The majority of the stories discussed the effects of climate change on conflict at varying levels of detail. Most of these stories made rather basic assumptions about the links between climate change and conflict. Stories 2, 6, and 14 suggested that weather has a direct impact on human behavior. Although this is something that some research has suggested (e.g., Rotton and Cohn 2004; van Lange, Rinderu, and Bushman 2018), the connection is controversial, with Raleigh and colleagues (2017:76) claiming that it is “little different from those ascribing poverty to latitudinal location or lessened individual productivity to hot climate, as was common in European and American scholarship a century ago.” A couple of stories flagged such temperature-aggression hypothesis as being problematic (Story 4) or not accurate (Story 10). The same assumption, however, undergirded several other stories identified, such as Stories 3 and 13, which suggested that resource scarcity and food insecurity are related directly to civil unrest, conflict, crime and terrorism. Stories 7 and 9, about the Central American migrant crisis, which made some valuable insights into the root causes of the problems that stimulate migration (in line with robust academic research by

Agnew 2011b; Fussey and South 2012; Scheffran et.al. 2012; van Lange, Rinderu, and Bushman 2018), oversimplified the causal nexus. The risk is that in an effort to highlight the social impacts of climate change, oversimplifications can make dangerous and problematic assumptions.

We gleaned another important insight from our analysis of Story 8, which highlighted research by a geographer. It did so, however, out of context in order to provide support for an opinion held by the author/outlet. In an effort to confirm that there was no link between global warming and migration, the source referred to Professor Clionadh Raleigh's work. Story 8 failed to represent Raleigh's work accurately, which has suggested that climate change can cause more labor migration and short-term relocations (Raleigh and Jordan 2010). Moreover, it oversimplifies the work of Raleigh (2010) on conflict, revealing the danger of oversimplifying and de-politicizing the causes of conflict.

Finally, the results also highlighted that it is important to be wary of stories that cite only one academic study. This was the case in Story 2, which focused on a study about the effect of higher temperatures on law enforcement. The problem of delivering scientific knowledge in this way is that it suggests that one study, by itself, can explain a social-scientific phenomenon. In academia, reviews of literature help provide insights into a subject, avoiding reaching erroneous conclusions from a single study. Moreover, social science relies on numerous studies to understand a subject and to reach conclusions.

The stories identified in our study did not question the existence of climate change or present climate change deniers as worthy of the same attention as climate scientists. This is most likely a factor of the two key words used in the search. Perhaps searching for stories that discussed "climate change" and "crime" returned stories focused on the causes and effects of climate change, and not on *whether* climate change is occurring.

The findings of our study suggest that there is not only a paucity of coverage on the climate-crime nexus, but that when the subject is discussed in the media, it is often problematic. Most of the stories lacked critical and informative coverage of the subject. Stories were often so oversimplified that they were misleading. In addition, stories often relied too heavily on one study, which was presented as fact, and stories also cited research out of context in order to make a point or support a belief.



The current study was limited to the US, to online news sources, to stories in English, to one year (2018), and to only two key words (“climate change” and “crime”). Future research could broaden the research on the mediated content on the subject of climate change and crime to non-US, non-online, non-news, and non-English sources. It would also be interesting to look at other time periods and to use a selection of keywords. For instance, our study was not able to capture behaviors that are harmful, but not defined as “crimes.” Perhaps keywords that capture broader social effects of climate change might yield a larger set of results. Nevertheless, the current study does provide some preliminary insights that suggest some initial conclusions.

It is clear that the subject of climate change and its connection to crime needs more coverage in the media. The urgency of the climate crisis requires clear articulation of the problem’s origin and the effects it will have on society. Such research and the resulting media coverage will allow the public to understand the scale of the problem and make the effects of climate change more relevant and relatable. Such coverage needs to be accurate and not oversimplified, however; it needs to be presented within its proper context and it should not rely on single studies to reach conclusions. This means that media professionals should include social science research in climate change media stories. The research presented here also supports calls by scholars for more sociological analysis of climate change and for such sociological and criminological research to be discussed along with that of scientists and economists (Agnew 2011a; Fussey and South 2012; Urry 2011). At the same time, more academics might wish to heed Belknap’s (2015) call for an “activist criminology”—one which engages the media and the public. With such an approach, academics “counter cultures of denial and normalization that usually cover state crimes seek out extra-academic audiences and enter into dialectic conversations with various publics” (Kramer 2016:519) to ensure that there is more awareness around climate change and the related but unrecognized blameworthy harms (Agnew 2011a, 2011b). This might allow dialogues to move beyond the environmental effects of climate change to ensure that the social effects of climate change are granted greater prominence.

## Appendix A

Stories identified in *US Top Online News* that discuss the nexus of climate change and crime 2018

<b>Story</b>	<b>Date</b>	<b>Source</b>	<b>Title</b>
<b>1</b>	07/09/2018	<i>The Guardian- Opinion Editorial</i>	I Confronted Scott Pruitt not for his Corruption but for his Environmental Crimes
<b>2</b>	08/15/2018	<i>CNBC</i>	Rising crime? Blame climate change
<b>3</b>	03/14/2018	<i>Breitbart</i>	Democrat Sen. Kirsten Gillibrand: Climate Change Helping ,Create More Terrorism, in Africa
<b>4</b>	09/21/2018	<i>The New York Times</i>	A Rise in Murder? Let's Talk About the Weather
<b>5</b>	08/19/2018	<i>CNN- Opinion Editorial</i>	Trump's Failure to Fight Climate Change is a Crime Against Humanity
<b>6</b>	10/15/2018	<i>The Guardian</i>	What Does Climate Change Really Cost Society? This Lab is Trying to Find Out
<b>7</b>	10/30/2018	<i>The Guardian</i>	The Unseen Driver Behind the Migrant Caravan: Climate Change
<b>8</b>	10/31/2018	<i>Daily Caller</i>	The Media Puts A New Spin on Migrant Caravan Coverage - They're Fleeing Global Warming
<b>9</b>	12/11/2018	<i>CNN</i>	One Suspected Driver of the Migrant 'Caravan': Climate Change
<b>10</b>	11/13/2018	<i>The Guardian</i>	Warmer Winters Linked to Higher Crime Rates, Study Finds
<b>11</b>	11/16/2018	<i>The New Yorker</i>	How Extreme Weather is Shrinking the Planet
<b>12</b>	11/24/2018	<i>Buzzfeed</i>	Brazil Says Deforestation in the Amazon is at its Worst Level in a Decade
<b>13</b>	11/02/2018	<i>The Atlantic</i>	Future Shock in the Countryside
<b>14</b>	02/13/2018	<i>Associated Press</i>	Trump: Gut Funding for Climate Science, Boost Fossil Fuels



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