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The 'Bolsonaro bridge': Violence, visibility, and the 2019 Amazon fires

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ABSTRACT

News coverage of noteworthy environmental events is often fleeting, moving from one spectacle to another and rarely retaining global attention. But in August 2019, news of Amazon rainforest fires spread seemingly as quickly as the fires themselves, with sustained global coverage and funding pouring into environmental organizations. Yet Amazon fires regularly occur and fires were simultaneously burning in other important Brazilian biomes, with some causing worse damage. What was it about the 2019 Amazon fires that elicited such a strong and persistent global response? In this paper, we draw on distinctions between slow/immediate (Nixon, 2011) and structural/direct violence (Galtung, 1969) to answer this question. We argue that the Amazon's reputation as a global treasure and its association with climate change and biodiversity through 'giantness' (Slater, 2002) meant that the fires' local spectacular violence became felt as an instant global threat, shifting perceptions of violence from slow to immediate. Moreover, as the identified instigator of the violence, Brazilian President Jair Bolsonaro became a sort of 'bridge' between structural and direct dimensions of violence, thus making the violence personal. These three dynamics combined to enhance visibility of the Amazon's destruction and its connection to planetary stability, thereby inspiring the 2019 fires' extraordinary reactions. Through this analysis, the paper contributes to psychological literature on perceptions of ecological crises and to discussions in political ecology/geography concerning violent environments by demonstrating how and why both the slow and structural violence of the global climate and biodiversity crises can be rendered more visible via localized effects.

1. Introduction

In August 2019, news of the Amazon rainforest burning went viral after smoke from the fires turned the skies above São Paulo black (Amigo, 2019). #PrayForAmazonia was Twitter's 6th top news-related hashtag of 2019 (Filadelfo, 2019). Major celebrities such as Leonardo DiCaprio, Madonna, Ellen Degeneres, and Dan Rather pleaded for action on social media (Jefferson, 2019). The fires made top headlines in global media (Dunne and McSweeney, 2019), often dominating the news (Voiland, 2019). In response to the fires, French President Emmanuel Macron took to Twitter to call on members of the G7 to prioritize discussion of the fires at the upcoming summit (Macron, 2019). Funding poured into environmental organizations with a focus on the Amazon, a phenomenon that also made global headlines (Nguyen, 2019). Leonardo DiCaprio's Earth Alliance pledged \$5 million to fight the fires (Taylor, 2019a). Rainforest Alliance raised \$1.2 million (Rainforest Alliance, 2019). The G7 pledged \$22.2 million (Nguyen, 2019). By all accounts, the Amazon fires of 2019 were sustained global news. But the 2019

Amazon fires weren't particularly unique by several measures.

Although Brazil's space research agency (INPE) reported an 83% increase in the number of fires in 2019 over the same period in 2018 (Gibbens, 2019), Amazon fires are common this time of year. In fact, "an analysis of NASA satellite data indicated that total fire activity across the Amazon basin (in 2019 was) close to the average in comparison to the (prior) 15 years" (NASA Earth Observatory, 2019). At the same time, several of Brazil's other biomes were experiencing record numbers of fires, including the Pantanal, Cerrado, and Mata Atlântica (Atlantic Forest) (Justice and Conservation Observatory, 2020; NASA Earth Observatory, 2020; Woodyatt, 2019). And while the Amazon rainforest hosts up to 30% of the world's species, it is not considered a biodiversity 'hotspot' (Critical Ecosystem Partnership Fund, n.d.), defined as an ecosystem with "areas featuring exceptional concentrations of endemic species and experiencing exceptional loss of habitat" (Myers et al., 2000, p. 853). By contrast, both the Cerrado and Mata Atlântica are considered biodiversity hotspots. Yet these fires barely registered in international news. What was it about the Amazon fires that elicited such a strong and

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S. Deutsch and R. Fletcher

sustained global response? Why the Amazon and not other places? And why 2019 and not other years?

In this paper, we argue that this extraordinary reaction was due to three interrelated perceptual shifts in relation to the fires' violence and that of the global climate and biodiversity crises to which the fires were conceptually linked. These comprise shifts from structural to personal violence; from slow to immediate violence; and from local to global impacts. We argue that the unique position of the Amazon in the global imaginary, its status as a key defense against the climate and biodiversity crises, and the election of Jair Bolsonaro collectively laid the groundwork for these perceptual shifts and hence the visibility of the destruction the Amazon fires wrought. This visibility was enhanced by the significant increase in deforestation following Bolsonaro's election, which in turn was further magnified by Brazil's satellite monitoring system (DETER). These dynamics combined to underscore the ostensibly global impact of the (local) fires as an immediate and spectacular visual representation of the slow violence caused by the climate and biodiversity crises. Bolsonaro's unprecedented response and refusal to acknowledge or address the seriousness of the fires, moreover, formed a sort of 'bridge' between (actor-less) structural violence and the (personal) direct violence he was seen to have perpetrated. As a result of this confluence of factors, the (slow, structural) violence caused by the climate and biodiversity crises were made more immediate and tangible, creating a sense of urgency to act, and hence inspiring the extraordinary reactions to the fires.

In developing this analysis, we build upon and contribute to existing research exploring the psychological dynamics shaping perceptions of ecological crises and to discussions in political ecology and geography concerning the manifold violence of such crises. Such research has demonstrated that the violence of ecological crises often goes unacknowledged and unaddressed precisely because the violence inherent in such crises unfolds slowly, is hidden, or is difficult to connect with its source. Our analysis contributes to this discussion by demonstrating how and why both the slow and structural violence of the global climate and biodiversity crises might be rendered more visible through their local effects. This paper thus reveals one way to bring hidden violence into the foreground where it can inspire collective action.

The analysis is based on 12 weeks of field research conducted in Brazil over three separate trips in 2019. In the course of this research, the first author conducted semi-structured interviews with 35 environmental non-government organization (ENGO) employees, academics, and civil servants in environmental agencies. This research also entailed participant observation and discourse analysis of primary sources, such as newspaper and media clips.

We begin by outlining previous research exploring the psychology of perceptions of the climate and biodiversity crises, as well as analyses of such crises by political ecologists and geographers as embodying various forms of violence. We then explore the place of the Amazon in the global historical imaginary from its depiction as a global treasure to that of a poster child for biodiversity and climate stability and, therefore, a bulwark against the dual crises of climate change and species extinction. Following this, we demonstrate how the global status of the Amazon explains why any potential threat to the forest is perceived as a global threat. We then explore Bolsonaro's response to the fires and the subsequent backlash this provoked. Finally, we explain how this series of events led to Bolsonaro becoming the face of the Amazon's destruction, a visible enemy who must be defeated post-haste in order to save the region, and thus the world.

2. Perceptions, violence, and visibility of the climate and biodiversity crises

The climate and biodiversity crises are widely regarded as two of the most significant threats to planetary life (Rockström et al., 2009) and this is reflected in the enormous body of literature that examines both crises. One of the many debates at the center of this literature is how to

make these crises more visible or undeniable such that people are motivated to act to counter them (see for example de Guttry et al., 2019; Hulme, 2009; Lees et al., 2020; Miller, 2005; Nabhan, 1995; Rudiak-Gould, 2013; Seddon et al., 2013). This debate has been approached from a variety of disciplinary lenses. The two most relevant to the present study explore perceptions and violence in relation to the dual crises, respectively.

Much of the psychological literature on perceptions of the climate crisis focuses on individuals or households (Nielsen et al., 2020). For example, Newell and Pitman (2010, p. 1004) lament the "disconnect" between the science and the public/media perception of the problem" of the climate crisis. The evidence is there, they argue, but how do we make more visible a crisis that is "colorless, odorless, and slow acting" (ibid. p. 1007)? In answer to this question, they outline twelve psychological dynamics that may inhibit individuals' ability to comprehend climate change facts and how to tackle these. While they discuss the importance of the framing of an event, including "making outcomes feel more concrete" by, for example, "encouraging people to think about the possible specific impacts of future events in the context of where they live and how these events might affect their daily routines," they do not discuss such events in terms of the violence they entail, which is arguably the motivating factor behind such events. Similarly, multiple studies highlight the importance of 'psychological distance' in explaining the relationship between perception and action in relation to climate change (Brügger et al., 2015; McDonald et al., 2015; Wang et al., 2018). For example, de Guttry et al. (2019) contend that understanding the way that climate change is positioned at different geographic and temporal scales is key to illuminating how people make sense of the crisis, although they are careful not to draw conclusions about what this might mean politically.

In his book *Why We Disagree about Climate Change*, Hulme (2009) contributes to this discussion by drawing on risk psychology to argue that climate change is commonly perceived as an 'un-situated risk,' wherein "(t)he source of the risk is distant and intangible" (ibid., chap. 6.4) and hence "lacks the immediacy and situatedness of other risks which ... (unlike climate change) evoke a strong visceral reaction" (ibid., chap. 6.4). Thus, those who understand the risks of climate change must find crafty ways of demonstrating its immediate risks to make them more perceptible. Hulme then examines the various ways actors have sought to frame climate change as 'dangerous' in attempts to effectively communicate the risks.

Whereas the literature on perceptions of the climate crisis tends to focus on associated hazards and risks, much of the work on perceptions of the biodiversity crisis focuses on potential losses of benefits received from biodiversity. Thus, most studies center on how to educate the public concerning the importance of biodiversity and the consequences of its loss. First proposed by Robert M Pyle (1993) and later confirmed by various studies (see Soga and Gaston, 2016 for a review), the 'extinction of experience' refers to the trend of human experiences increasingly shifting to the virtual world, with significantly less interaction with the natural world. This trend, it is postulated, leads to a lack of understanding of and care for the biodiversity crisis among the general public. The obvious solution, then, is to reconnect the public with 'nature' so that they are more in tune with the losses associated with extinction, and to increase awareness of the biodiversity crisis through education (Campbell-Arvai, 2019; Miller, 2005; Seddon et al., 2013). Others argue that this approach is too simplistic and ignores the multiple and complex ways that people engage with biodiversity, instead advocating for approaches to biodiversity management that are capable of understanding and adapting to stakeholder values (Buijs et al., 2008; Fischer and Young, 2007). More recently, Bonebrake et al. (2019) critique an overemphasis on localized threats to biodiversity and call for more attention to 'horizon threats' that significantly add to the crisis on larger temporal and geographical scales (e.g. climate crisis, land-use changes). Even more recently, Büscher (2020) explores the complex relationships among biodiversity, political economy, social media

platforms and "post-truth" politics in both representing and obscuring aspects of nonhuman nature in online conservation fora.

Each of the above studies have contributed significantly to understandings of public perceptions about ecological crises. Yet none of this research specifically examines the relationship between ecological crises and (framing in terms of) violence. Indeed, Hulme explicitly asserts that climate change "is not like slavery or domestic violence; distortions of human relationships to be outlawed and policed" (Hulme, 2009, chap. 10.1). By contrast, a substantial body of research produced by political ecologists and geographers has analyzed the various forms of violence operating in relation to environmental politics. Arising from a critique of the field of environmental security, where violence is often simplistically connected to scarcity or abundance of environmental resources, the perspective of 'violent environments' instead "accounts for ways that specific resource environments and environmental processes are constituted by, and in part constitute, the political economy of access to and control over resources" (Peluso and Watts, 2001, p. 5). Some scholars have expanded on such analyses by using a geopolitical ecology framework to also interrogate the role of geopolitical institutions in environmental change and violence (Bigger and Neimark, 2017; Massé and Margulies, 2020). Others have called attention to the growing trend of militarized violence in defense of biodiversity conservation (Büscher and Fletcher, 2018; Büscher and Ramutsindela, 2016; Duffy, 2014; Duffy et al., 2019; Lunstrum, 2014; Massé, 2018; Ybarra, 2018). Recently, Marijnen et al. (2020) build on these analyses by situating such violence within broader contexts of war and conflict in their discussion of 'conservation in violent environments.'

Within this expansive body of literature on the relationship between violence and environmental politics, several researchers reflect on forms of violence that are often rendered invisible within dominant societal processes (e.g. Bigger and Neimark, 2017a; Büscher and Fletcher, 2018, 2017; Marcatelli and Büscher, 2019; Witter and Satterfield, 2019). These discussions commonly build on Galtung's (1969) pioneering analysis of such hidden forms of violence. Particularly useful for the present analysis is Galtung's distinction between 'personal' or 'direct' violence, wherein the person committing the violence is identifiable, and 'structural' or 'indirect violence', which lacks an identifiable actor. Rather, indirect violence "is built into the structure and shows up as unequal power and consequently as unequal life chances" (Galtung, 1969, p. 171). Galtung thus equates structural violence with 'social injustice' (ibid.). While direct violence is visible as an action (rather than a random occurrence) because there is a subject, indirect violence becomes hidden in the absence of a subject, and may not even be perceived as such at all. Instead, it is just something that happens, and consequently it fades into the background so as to appear natural. Galtung therefore argues that giving violence a subject completes an 'interpersonal influence relation' of subject-action-object. And in these complete relations, violence is visible.

Both the climate and biodiversity crises are seen to lack a single agent to hold accountable, a characteristic that "constitutes a field of invisibility" (Winter, 2012, p. 198). Perpetrators of the biodiversity and climate crises are thus historically difficult to identify, partly because there are so many of them and partly because the effects of their actions are temporally displaced. Moreover, both the biodiversity and climate crises disproportionately affect the world's poor and otherwise marginalized populations (Díaz et al., 2006; Rayner and Malone, 2001) yet arguably lack an actor or subject. From this perspective, both the climate and biodiversity crises can be understood as enacting forms of structural violence.

Building on Galtung's conceptualizations of invisible violence, Nixon (2011, p. 2) argues that deforestation - the largest contributor to biodiversity loss - and climate change are forms of 'slow violence,' defined as "a 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." He argues that these two characteristics - slow progression and a lack of

links made between individual spectacular events - make it difficult to draw attention to unfolding processes of slow violence. Tyner (2016) expands further on hidden forms of violence by arguing that what gets defined as violence in view of the law, what is understood as violence within a given society depends on how lives are valued at a particular time in history. Thus, the forms of violence that are hidden are not innately so, but rather by design. According to Tyner then, the recognition of contemporary violence often requires immediate and spectacular harm.

The triple invisibility of the biodiversity and climate crises (slow progression, lack of linkages between violent events, and lack of an identifiable actor), combined with a lack of structural support for defining such crises as violence, help to explain why a recent Pew poll found that nearly one third of the global population doesn't register the climate crisis as a major threat (Poushter and Huang, 2019). And a recent IPCC (2018) report suggests that the global community is not doing enough to prevent catastrophic climate collapse. Moreover, skepticism of the science behind biodiversity loss is growing, even as extinction rates accelerate (Lees et al., 2020). Analyses of the (in)visibility of violence are thus essential for understanding how such violence is able to continue, despite many efforts to stop it. Yet no research to date has explored shifts in perception as they relate specifically to the visibility of the violence inherent in the climate and biodiversity crises.

The research in psychology and political ecology and geography outlined above each offer partial explanations for the 2019 Amazon fires case that, when taken together, provide for a more comprehensive understanding than either lens alone. While studies on perceptions of ecological crises explore how to overcome such crises' deniability, they do not address the potential to relate crises to violence in this effort. Meanwhile, political ecology and geography offer useful frameworks through which to understand the visibility of environmental violence, and particularly the slow and structural violence of ecological crises, but rarely explore how to make these more visible. In the following analysis, we therefore bring these different perspectives together to explore how a violence framework can explain the changes in perceptions that influenced public responses to the dual climate and biodiversity crises embodied in the 2019 Amazon fires.

3. The visibility of the Amazon: from the local to the global

Shortly after the Amazon fires became big news, many interviewees were frustrated by what they clearly saw as over-attention to the Amazon fires. As one of the interviewees said: "(that) the points (numbers) of fires were higher than the historical average 1 is something that our team identified; they confirmed that. And also, this thing that it was not as bad as the news was saying it was. It was also something that they confirmed" (public policy specialist for an ENGO, October, 2019). As we discussed the fires and related media coverage, he reiterated that he thought "it was important. It was something big but it was not something like out of the expected" (ibid.). In fact, fires are a standard part of the landscape in the Amazon basin during the dry season (July to November), although many wouldn't consider them 'natural' since most of them are started by people as part of land management, as well as to clear newly deforested land (NASA Earth Observatory, 2019). And although deforestation fires in the Amazon started earlier in the dry season in 2019 and there were some reports of record-breaking numbers of fires in August, overall fire activity was roughly average when compared to the same time period over the previous 15 years, as were the year-end totals (NASA Earth Observatory, 2019; Voiland, 2019).

Many of the interviewees seemed to share a frustration with the hyper focus on the Amazon fires in relation to other events. As an employee of ICMBio - the government agency that provides research and

¹ The interviewee later clarifies that, while the numbers of fires were higher than the historical average, the total area of the fires was not.

monitoring to guide environmental regulations for protected areas and species - explains: "there are fires happening at a bigger scale in the Amazon, but there were also quite a few here in the Cerrado. There's a few of the National Parks here that are on fire. And a bit of the Pantanal, as well, is on fire" (October 2019). In fact, at the same time that international media was headlining the Amazon fires, record-breaking fires were logged in the Pantanal, Cerrado, and Mata Atlântica (Atlantic Forest) (Justice and Conservation Observatory, 2020; NASA Earth Observatory, 2020; Woodyatt, 2019). Yet the focus in global media was almost entirely on the Amazon fires to the point that another interviewee remarked that this single focus "was a big problem, because in other biomes, what people are saying is that things were worse than in the Amazon, especially in Pantanal. The increase (of fires) was a lot, a lot higher" (public policy specialist for an ENGO, October, 2019). Participants seemed generally worried that other important issues in other Brazilian biomes were being masked by the Amazon fires. While we don't wish to downplay the media coverage of the Amazon fires (indeed given Bolsonaro's attacks on environmental governance structures, such coverage is warranted), we sought to understand why the media was only focusing on the Amazon fires. In an effort to understand this hyper focus, we first explore the global magnification of the (local) Amazon.

Beginning in the sixteenth and seventeenth centuries, the Amazon rainforest had a significant place in European exploration and imaginaries. For early European explorers, to survive an expedition to the Amazon was a status symbol and great achievement. In *Entangled Edens*, Candace Slater (2002, p. 13) describes the Amazon as a place of 'giants' and as a 'giant' itself where 'giant' is less a reference to size, but rather "to a narrative process in which one part comes to stand in for a larger whole" as stories are passed from generation to generation. She demonstrates that the historical global fascination with the Amazon emerged from this process of 'giant-making,' as demonstrated through (outsider) stories about the Amazon, from its secret treasures to its hidden cities, from its legendary warrior women to its virginal forests, and from its hellscapes to its Edens.

In the centuries following Europeans' introduction to the Amazon, a rotating procession of European and North American explorers, naturalists, entrepreneurs, journalists, speculators, and military personnel devised various ways to insert their influence and interests into the development of the Amazon. Borders were drawn and redrawn. Extraction rights were negotiated and renegotiated. Eventually, Brazil's military ascended to power with the economic development of the Amazon as a key part of their strategy beginning with president Getúlio Vargas' 1937 Estado Novo. Ultimately, the development planning of the Amazon led to the building of roads, the Belem-Brasilia highway or 'road of the jaguar' in particular, that led to large-scale colonization and a massive shift of land to private interests. Following this was a substantial uptick in deforestation, clearing fires, and oil and gas extraction in the 1960 s and 70 s (Hecht and Cockburn, 2010). Moreover, mining and beef production saw significant growth following the military coup in 1964, which massively incentivized migration from the south to colonize and develop the Amazon (Campbell, 2015).

In response to this growing and seemingly unchecked exploitation of the Amazon and other rainforests around the world at the time, environmental groups organized campaigns to stop the devastation. Their campaigns centered on the idea that "the destruction taking place in rain forests. (was) a threat not just to the region, *but to the planet as a whole*" (Slater, 2002, p. 134, emphasis added). Their focus on the Amazon rainforest, Slater argues, contributed to its continued 'gigantification,' whereby it became nearly synonymous with 'Rain Forest.' And its continued depiction as a wellspring of natural riches and the keeper of global health, earned it its status as a poster child first for biodiversity and later for climate stability. As such, it took on a new symbolism as global guardian – first against the biodiversity crisis in the 1970 s and later against the climate crisis. All of this has led to "a long tradition of seeing the Amazon as a realm of nature that it was (the world's) mission or their right—and not the mission or right of Amazonians—to protect" (Slater, 2002, p. 4). Thus, the Amazon in its 'gigantification' simultaneously became protector of the world and in need of the world's protection.

4. The visibility of the fires: from slow violence to immediate violence

The attention to and urgency of the deforestation situation in the Amazon led to the prioritizing of the environment during Brazil's Lula administration, with Marina Silva, who had strong connections with environmental NGOs, as minister of the environment. Under Lula and Silva's leadership, INPE developed DETER, allowing for near real time visibility of forest change. Before the implementation of DETER, deforestation data took up to two years to be released, making it difficult to track, catch, and prosecute deforestation offenders. But DETER changed that, becoming a central tool for environmental law enforcement (Rajão and Jarke, 2018). Moreover, the monthly aggregation and publication of the data by INPE scientists and the public use of the data by environmental NGOs not only put more pressure on the government and would-be deforesters, but it made deforestation more visible, both literally and through drawing attention to it. Thus, when anti-environmentalist Bolsonaro took office in 2019, all eves were already on deforestation rates via DETER in anticipation of the predicted effects of Bolsonaro's policies and lack of environmental law enforcement. In other words, the stage was set for visibility of continued forest damage.

So when INPE released a report indicating an 88% increase in deforestation in June 2019 compared to June 2018 (Schreiber and Fellet, 2019), the news went international almost immediately. However, it wasn't until news of the fires hit global media around a month later, with clear connections to the increased deforestation (Silvério et al., 2019) that the devastation of the forest garnered *sustained* global coverage and unprecedented amounts of funding began pouring into Brazil from celebrities, environmentalists, and concerned citizens around the world to fight the fires (Nguyen, 2019).

Slater (2002, p. 14) asserts that 'giants,' such as the Amazon, are "the targets of 'false fear' – a term (she) use(s) to mean the anxiety generated by an entity that is ultimately not the real source of concern. (We say we are worried about. rain forests when we are really worried about our own ability to breathe and our grandchildren's survival)." We argue that the improved visibility of deforestation resulting from DETER and the threat of Bolsonaro combined with the 'false fear' of the burning Amazon as a representation of the burning planet to create a unique set of circumstances that served to instantly magnify the local to the global. This is clear from the tenor of much of the media surrounding the 2019 fires, as demonstrated in Fig. 1, where the fires are portrayed as an 'international emergency.' The fires are seen as a threat to planetary survival where the threat to the Amazon spells death for the planet and all life on it ('If the Earth Dies, So Do We').

The Amazon's place as a global treasure and it's 'giantness' in relation to climate stability and biodiversity meant that the immediate violence of the Amazon fires became an immediate global threat, and so the spectacle and shock value of the fires, the burning animal carcasses, and indigenous peoples fleeing their homes, emphasized the violence inherent in the dual crises. And the global visibility increased the 'false fear' of the burning Amazon and the sense of global anxiety and this increased visibility and so on in a self-enforcing feedback loop, bringing the violence of the climate and biodiversity crises into full (visible) focus. Thus, the fires represented, and *were recognized as*, an immediate manifestation of slow violence. Yet there is still more to the story behind the distinctiveness and visibility of the 2019 Amazon fires. In the next section, we continue to explore the role of Bolsonaro in the visibility of and reaction to the fires.



Fig. 1. Some representative headlines in media coverage of the Amazon fires of 2019. Sources: Johnson (2019) (left); Wig (2019) (right).

5. Bolsonaro's responses to the fires

As we argue above, part of the hyper focus on the Amazon fires of 2019 can be explained by the improved visibility of the fires and the relative 'giantness' of the Amazon compared to the other biomes on fire. Still, such an understanding falls short of explaining why sustained global coverage of the fires occurred in 2019 and not in any years prior. While there was a tendency to overinflate or misinterpret the fire data by both proponents and opponents of environmental regulations (Voiland, 2019), we don't believe this offers a complete explanation either because the news stories often focused on more than just the fires themselves. Here we examine Bolsonaro's response to the real rise in deforestation preceding the fires, as well as to the fires themselves and to the global criticism for his handling of the fires. We argue that he became a visible perpetrator of the immediate violence of the fires and that this elevated the story of the fires in global media yet again by transforming the impersonal structural violence of deforestation and climate change (understood as provoking the fires) into a direct personal consequence of Bolsonaro's own actions.

When INPE released preliminary data that indicated an 88% increase in deforestation in June 2019 compared to the same month in the previous year (Schreiber and Fellet, 2019), Bolsonaro verbally attacked the agency, claiming they fabricated the data "at the service of some nongovernmental organization" (Escobar, 2019a). In response, the director of the agency, Ricardo Galvão, called Bolsonaro a "coward" and challenged Bolsonaro to accuse him of lying to his face. The dispute eventually led to Bolsonaro firing Galvão on August 2, 2019 (Escobar, 2019b; Spring and Eisenhammer, 2019a).

A few weeks later, when news of the Amazon fires first hit the media circuit, the fires were largely attributed to the increased deforestation associated with Bolsonaro's weakening of forest protections and environmental law enforcement (Borunda, 2019; Spring and Eisenhammer, 2019b). But Bolsonaro had a different story for the media, claiming that it was environmental NGOs who set the fires in a misguided attempt to

recover some of the funding they had lost due to the dismantling of federal funding mechanisms for environmental causes by his own administration. He provided no evidence for these claims, and none was ever found (ABC/wires, 2019; Hanbury, 2019; Watts, 2019). Somewhat ironically, the effects of his comments were global outrage - which increased the visibility of the fires - and an influx of funding to environmental NGOs (ABC/wires, 2019; Reuters, 2019). In fact, the connection of Bolsonaro's actions with inflows of international funding was so stark that one of the interviewees, who works for a socio-environmental NGO remarked that Bolsonaro was one of the NGOs' greatest fundraisers, with money pouring in "each time (he) opens his mouth" (ENGO Director, October 2019).

Beyond blaming NGOs for starting the fires, Bolsonaro engaged in several public disputes with famous individuals over the burning Amazon. One of the first major public figures to draw attention to the fires was French president Emmanuel Macron, who on 22 August tweeted "Our house is burning. Literally. The Amazon rain forest - the lungs which produces 20% of our planet's oxygen - is on fire. It is an international crisis. Members of the G7 Summit, let's discuss this emergency first order in two days! #ActForTheAmazon" (Macron, 2019). Subsequently, media outlets began reporting that the fires in the Amazon were becoming a central part of conversations at the G7 summit (Holcombe et al., 2019; Ungarino, 2019), prompting accusations of colonialism from Bolsonaro (Taylor, 2019b). In direct response to Macron, Bolsonaro took aim at Macron's wife, using Facebook to mock her physical appearance. When a Bolsonaro supporter posted side-by-side photos of the two leaders' wives on Bolsonaro's FB page with the caption "Now do you understand why Macron is persecuting Bolsonaro?," Bolsonaro responded with "Do not humiliate the man hahaha" (AFP/Reuters, 2019). A public feud ensued where Macron rebuked Bolsonaro's comment as disrespectful and things escalated from there (AFP/Reuters, 2019), culminating in Bolsonaro's rejection of US \$22 million in funding from the G7 to fight the Amazon fires unless Macron apologized (Taylor, 2019b).

Later in the year, four firefighters were arrested in Pará state on allegations of intentionally starting fires in order to take pictures of them for the World Wide Fund for Nature (WWF) to use in fundraising campaigns. The firefighters were released several days later due to lack of evidence, although Bolsonaro continued to indicate that Brazilian environmental organizations and NGOs were responsible for setting the fires. At one point, he even suggested that actor and environmentalist Leonardo DiCaprio had sent WWF money in response to being shown pictures of the fires they had supposedly bankrolled. DiCaprio immediately issued a statement in support of WWF and other NGOs being targeted by Bolsonaro, while also stating that he had never given funds to the organizations. The effect was another global round of outrage at Bolsonaro's handling of environmental concerns, and particularly with respect to deforestation and the Amazon fires (Asmelash, 2019; BBC News, 2019).

We argue that Bolsonaro's role in the deforestation that allegedly led to more fires - and his response of first denying the issue, then blaming NGOs, then rejecting any foreign aid - led to global outrage directed at Bolsonaro, elevating the visibility of the fires and placing the blame at his feet. And owing to the role of the Amazon in biodiversity and climate stability, Bolsonaro's actions were thus perceived as a *global* threat. Two things are of note with respect to the visibility of Bolsonaro's role in the Amazon fires. First, his continued antagonistic and very public disputes with well-known scientists and environmentalists ensured the role of spectacle in making his (in)actions known on the global public stage, eliciting the associated outrage. Second, several have argued that Bolsonaro's anti-environmentalism is part of a broader agenda to restructure federal governance mechanisms to remove the need for consent and consolidate executive power (Deutsch, 2021; Saad-Filho and Boffo, 2020), Hence, Bolsonaro was not just visible as the promoter of the destruction of the Amazon in 2019, but also more generally as the dismantler of democracy and environmental protections. Still, while Bolsonaro did a good job of singling himself out as the destroyer of the Amazon, we argue in the next section that the framing of Bolsonaro as a villain in global media amplified public perception of him as actively causing the fires and thus actively causing the Amazon's destruction and personifying a global threat.

6. Media framing of Bolsonaro's response: impersonal violence gets personal

Commenting on a recent draft report of the IPCC, Robert Brulle

equated the lack of a subject in the report to "trying to tell the story of Star Wars, but omitting Darth Vader" (Lo, 2021). Such a comment is emblematic of the struggle to complete Galtung's (1969) 'interpersonal influence relation' discussed above. However, here we argue that Bolsonaro's handling of the fires and the global response to them clearly singled him out as *the* perpetrator, not just of the fires themselves, but of the broader crises they represented.

In August 2019, the global media were flooded with images such as those seen in Fig. 2. In every image, Bolsonaro is clearly portrayed as the destroyer of the Amazon. In some images, his casual recklessness is punctuated by an apparent glee as he wreaks his devastation on the forest. At the same time, what is also clear from the left two images, which are representative of many similar images in the media at the time, is that Bolsonaro is not just the destroyer of the Amazon, but of the world. He is deemed the cause of "the world's next environmental catastrophe" (Blunck, 2019) and his actions are imagined as a "crime against humanity" (Smith, 2019). Others in the media connected the situation in Brazil to broader global trends. Noting that "(t)he Amazon rainforest fires reveal a lot about this (rightwing) political movement," Beauchamp writing for Vox continues:

The wave of rightwing populism sweeping the world is not only dangerous for the countries who succumb to it, or even to immigrants wishing to move to those nations. It's a fundamental threat to progress against climate change — and thus the entirety of the human race (Beauchamp, 2019).

The Amazon is represented in the images the same way as Slater describes in her analysis of its representation in an article on gold miners in the Amazon: "as profoundly vulnerable" (2002: 125). And with news articles highlighting the disapproval of Bolsonaro's handling of the fires "even from his allies" (Pereira, 2019), Bolsonaro is clearly singled out, seen as the perpetrator of the fires and thus of global destruction. He becomes the villain attacking the virginal forest and the lungs of the earth, someone who needs to be stopped before he destroys the world. The dual crises of biodiversity loss and climate upheaval are given a concrete offender, at least temporarily. Consequently, whether or not Bolsonaro is actually the perpetrator of the fires and thus of global destruction, what matters is that he was *perceived* as the perpetrator, forming a sort of bridge - however ephemeral it may be - to connect the structural violence of the dual crises to an actor, making it personal and completing the 'interpersonal influence relation' rendering the violence visible. To reinforce this point, we next examine the public response to



Fig. 2. Media framing of Bolsonaro. Sources: (clockwise from top left) (Smith, 2019; Latuff, 2019; Cavanagh, 2019; Leeuwen, 2019; Blunck, 2019).

Bolsonaro and the events and media coverage surrounding the August 2019 fires.

7. Public response

Well, he thinks that he's cutting the money but in fact, he's increasing the importance of our work to the whole world now. (ENGO Director, October, 2019)

This response by an interviewee to a question about how her organization was affected by Bolsonaro's attempts to divert the Amazon Fund away from ENGOs demonstrates one of the effects of the 'Bolsonaro bridge.' She goes on to explain how a small school "in the middle of nowhere" learned of Bolsonaro's cuts to funding and raised US\$ 8500 for the organization to stop deforestation of the Amazon. Later, she explicitly ties the media and public responses to the fires to Bolsonaro's response to those fires:

It's very interesting for us, these events of the fire were quite incredible and what's more incredible is that the problem is not the fire because, okay, it was a huge fire, but the effect in the international level, it's not related to the fire itself. *It's related to what Bolsonaro says*" (ibid., emphasis added)

The personification by the public of Bolsonaro as *the* threat via his role in the biodiversity and climate crises also became clearly present in global protests against him and his response to the fires, as can be seen in Fig. 3. He graced many protestors' signs as the destroyer of the future and perpetrator of genocide, with some even suggesting that we burn Bolsonaro to protect the forests (see Fig. 3).

Thus, the public themselves effectively reinforced Galtung's (1969) 'interpersonal influence relation,' which increased its visibility, thus allowing more of the public to grasp the connection in another self-enforcing feedback loop. We argue that this helps to explain the continued and escalating response of the public to the Amazon fires of 2019. Throughout the world, people were calling for boycotts of

Brazilian products (Observatório do Clima, 2020) and pouring donations into Brazilian ENGOs (Nguyen, 2019). Multiple petitions circulated the internet calling on the EU to cancel Mercosur - an important trade agreement between the EU and Brazil, Argentina, Uruguay and Paraguay – until Bolsonaro got the Amazon fires under control (Bryant, 2019; Keystone-SDA/dos, 2019; Stuenkel, 2019). This response of the public seems to have then caused a chain reaction with 230 investors threatening to pull their investments from firms linked to deforestation in the Amazon (Branford, 2019; Observatório do Clima, 2020), culminating in political pressure even from Bolsonaro's allies to act (Pereira, 2019).

The events surrounding the Amazon fires of 2019 also seem to have shifted the national conversation in Brazil, at least according to one of the interviewees who explains:

There was a guy that called me, which was an editor of a famous magazine of the left. he said, 'Oh yes, we were very focusing on education. We were thinking that now the main issue would be the reform.'. Then he said, 'Now I've found out that environment is an important agenda.' (ENGO Director, October, 2019)

The improved visibility of the *act* of violence through the connection of the Amazon fires to the biodiversity and climate crises, and the identification of a perpetrator, thus made it possible to *react* in novel ways that highlighted the dual global crises in what would have otherwise been treated as solely a local one.

8. Conclusion

The destruction of the Amazon is clearly part of the slow, structural violence perpetrated by the climate and biodiversity crises. The Amazon fires, then, came to represent a spectacular and immediate manifestation of the slow violence of the climate and biodiversity crises. Moreover, in most cases of structural violence, the actor, and therefore intention to inflict violence, is absent or invisible. In this case, however, by acting in



Fig. 3. Public response to Bolsonaro's response to Amazon fires of 2019. Sources: (clockwise from top left) Caivano (2019); Keating (2019); Online Athens (2019); Irfan (2019).

defiance of global outcries to halt the destruction of the Amazon and return to successful anti-deforestation and reforestation policies, Bolsonaro declared himself the agent of Amazon destruction. In response, concerned environmentalists around the world perceived the destruction of the Amazon as a direct form of violence perpetrated by Bolsonaro himself. And because of the Amazon's position in the global imaginary as 'the lungs of the world,' 'the last Eden,' and the key to stabilizing the dual crises of climate change and biodiversity loss, this threat of violence was experienced as a global threat. In other words, Bolsonaro's refusal to acknowledge the seriousness of the fires, take responsibility for them, accept assistance in addressing them, and do so with urgency, was perceived as an attack on the global community and environment.

Although it remains unclear whether it was an intentional tactic to target Bolsonaro as the harbinger of global doom by those fighting extinction and climate change, what is clear is that it was effective. Many of the world's most egregious forms of violence are hidden, resulting in a failure to acknowledge and address them. This paper demonstrates one way to bring hidden violence into the foreground where it can inspire collective action. Future research could build on this work by exploring how to harness the momentum of such action to catalyze sustained global change.

CRediT authorship contribution statement

Sierra Deutsch: Conceptualization, Funding acquisition, Project administration, Project resource acquisition and planning, Data collection, Formal analysis, Validation, Writing – original draft, review, & editing. **Rob Fletcher:** Conceptualization, Formal analysis, Validation, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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References

- ABC/wires, 2019. Brazil President Jair Bolsonaro baselessly blames NGOs for Amazon fires and ignites global outrage. abc.net.au. URL (https://www.abc.net.au/news /2019-08-22/bolsonaro-blames-ngos-for-amazon-fires-igniting-global-outrage/11 437626).
- AFP/Reuters, 2019. France's Macron hits back at Brazil's Bolsonaro over "disrespectful" post about his wife. URL (https://www.abc.net.au/news/2019–08-27/macron-hitsback-at-bolsonaro-over-post-about-his-wife/11451166).
- Amigo, I., 2019. Amazon rainforest fires leave São Paulo in the dark. Mongabay. URL (https://news.mongabay.com/2019/08/amazon-rainforest-fires-leave-sao-paulo-inthe-dark/?utm_source=Mongabay+Email+Alerts&utm_campaign=1060306b59-ma ilchimp_all_daily&utm_medium=email&utm_term=0_e1ea8b5f35-10603 06b59-77153437\
- Asmelash, L., 2019. Leonardo DiCaprio responds after Brazil's President blames actor for Amazon forest fires. CNN. URL (https://edition.cnn.com/2019/11/30/world/leona rdo-dicaprio-bolsonaro-amazon-fires-trnd/index.html).
- BBC News, 2019. Brazil's Bolsonaro says DiCaprio gave cash "to set Amazon on fire." URL (https://www.bbc.com/news/world-latin-america-50613054).
- Beauchamp, Z., 2019. The right-wing populist wave is a threat to the climate. Vox. URL (https://www.vox.com/2019/8/22/20828297/amazon-rainforest-fire-bolsonar o-brazil-populism) (accessed 8.31.20).
- Bigger, P., Neimark, B.D., 2017. Weaponizing nature: the geopolitical ecology of the US Navy's biofuel program. Polit. Geogr. 60, 13–22. https://doi.org/10.1016/j. polgeo.2017.03.007.

- Blunck, J., 2019. Bolsonaro, the Amazon and the world's next environmental catastrophe. Prospect Mag. URL (https://www.prospectmagazine.co.uk/magazine /bolsonaro-the-amazon-and-the-worlds-next-environmental-catastrophe).
- Bonebrake, T.C., Guo, F., Dingle, C., Baker, D.M., Kitching, R.L., Ashton, L.A., 2019. Integrating proximal and horizon threats to biodiversity for conservation. Trends Ecol. Evol. 34, 781–788. https://doi.org/10.1016/j.tree.2019.04.001.
- Borunda, A., 2019. See how much of the Amazon is burning, how it compares to other years. Natl. Geogr. Mag. URL (https://www.nationalgeographic.com/environment /2019/08/amazon-fires-cause-deforestation-graphic-map/).
- Branford, S., 2019. Prompted by Amazon fires, 230 investors warn firms linked to deforestation. Mongabay. URL (https://news.mongabay.com/2019/09/promptedby-amazon-fires-230-investors-warn-firms-linked-to-deforestation/) (accessed 8.15.20).
- Brügger, A., Dessai, S., Devine-Wright, P., Morton, T.A., Pidgeon, N.F., 2015. Psychological responses to the proximity of climate change. Nat. Clim. Chang. 5, 1031–1037.
- Bryant, L., 2019. French Petition Adds Fuel to Amazon Spat. VOA News. URL (https://www.voanews.com/europe/french-petition-adds-fuel-amazon-spat) (accessed 12.11.20).
- Buijs, A.E., Fischer, A., Rink, D., Young, J.C., 2008. Looking beyond superficial knowledge gaps: understanding public representations of biodiversity. Int. J. Biodivers. Sci. Manag. 4, 65–80.
- Büscher, B., 2020. The Truth about Nature: Environmentalism in the Era of Post-truth Politics and Platform Capitalism. University of California Press.
- Büscher, B., Fletcher, R., 2018. Under pressure: conceptualising political ecologies of green wars. Conserv. Soc. 16, 105–113.
- Büscher, B., Fletcher, R., 2017. Destructive creation: capital accumulation and the structural violence of tourism. J. Sustain. Tour. 25, 651–667.
- Büscher, B., Ramutsindela, M., 2016. Green violence: rhino poaching and the war to save Southern. Africa's Peace Parks Afr. Aff. 115, 1–22.
- Caivano, V., 2019. Bolsonaro to send army to fight huge fires in the Amazon. King5. URL (https://www.king5.com/amp/article/news/nation-world/bolsonaro-to-send-armyto-fight-huge-fires-in-the-amazon/507–56116fdd-230f-41fe-bbf4–28a520e98a9e) (accessed 12.11.20).
- Campbell-Arvai, V., 2019. Engaging urban nature: improving our understanding of public perceptions of the role of biodiversity in cities. Urban Ecosyst. 22, 409–423. Campbell, J.M., 2015. Conjuring property: Speculation and environmental futures in the
- Brazilian Amazon. University of Washington Press. Cavanagh. A., 2019. Bolsonaro Amazon Rainforest Fires. caricatures-ireland.com, URL
- (https://www.caricatures-ireland.com/bolsonaro-amazon-rainforest-fires/).
- Critical Ecosystem Partnership Fund, n.d. Biodiversity Hotspots [WWW Document]. de Guttry, C., Süsser, D., Döring, M., 2019. Situating climate change: psychological distances as tool to understand the multifaceted dimensions of climate change meanings. Geoforum 104, 92–100.
- Deutsch, S., 2021. Populist authoritarian neoliberalism in Brazil: making sense of Bolsonaro's anti-environment agenda. J. Polit. Ecol. 28. https://doi.org/10.2458/ jpe.2994.
- Díaz, S., Fargione, J., Chapin III, F.S., Tilman, D., 2006. Biodiversity loss threatens human well-being. PLoS Biol. 4, e277.
- Duffy, R., 2014. Waging a war to save biodiversity: the rise of militarized conservation. Int. Aff. 90, 819–834.
- Duffy, R., Massé, F., Smidt, E., Marijnen, E., Büscher, B., Verweijen, J., Ramutsindela, M., Simlai, T., Joanny, L., Lunstrum, E., 2019. Why we must question the militarisation of conservation. Biol. Conserv. 232, 66–73. https://doi.org/10.1016/j. biocon.2019.01.013.
- Dunne, D., McSweeney, R., 2019. Media reaction: Amazon fires and climate change. CarbonBrief.org. URL (https://www.carbonbrief.org/media-reaction-amazon -fires-and-climate-change#:~:text=The> media has pointed to,increasing the chances of drought.
- Escobar, H., 2019a. Deforestation in the Amazon is shooting up, but Brazil's president calls the data 'a lie'. Sci. (80-.) (URL). (https://www.sciencemag.org/news/2019 /07/deforestation-amazon-shooting-brazil-s-president-calls-data-lie).
- Escobar, H., 2019b. Brazilian institute head fired after clashing with nation's president over deforestation data. Sci. (80-.) (URL). (https://www.sciencemag.org/news/2 019/08/brazilian-institute-head-fired-after-clashing-nation-s-president-over-defore station).
- Filadelfo, E., 2019. #ThisHappened in 2019. blog.twitter.com. URL (https://blog.twitter. com/en_us/topics/insights/2019/ThisHappened-in-2019.html).
- Fischer, A., Young, J.C., 2007. Understanding mental constructs of biodiversity: Implications for biodiversity management and conservation. Biol. Conserv. 136, 271–282. https://doi.org/10.1016/j.biocon.2006.11.024.
- Galtung, J., 1969. Violence, peace, and peace research. J. Peace Res. 6, 167–191. Gibbens, S., 2019. The Amazon is burning at record rates—and deforestation is to blame. Natl. Geogr. Mag. URL (https://www.nationalgeographic.com/environment/2019/ 08/wildfires-in-amazon-caused-by-deforestation/).
- Hanbury, S., 2019. Evidence 'unfounded' against NGO volunteers accused of setting Amazon fires. Mongabay.
- Hecht, S.B., Cockburn, A., 2010. The fate of the forest: developers, destroyers, and defenders of the Amazon. University of Chicago Press.
- Holcombe, M., Regan, H., Yeung, J., 2019. Amazon fires and sanctions high on agenda as G7 leaders meet at summit. CNN. URL (https://edition.cnn.com/2019/08/24/ame ricas/amazon-fires-sanctions-g7-intl/index.html).
- Hulme, M., 2009. Why we disagree about climate change: Understanding controversy, inaction and opportunity. Cambridge University Press.
- IPCC, 2018. Special Report: Global warming of 1.5 oC.

S. Deutsch and R. Fletcher

Jefferson, W., 2019. Celebrities Are Speaking Out About The Amazon Rainforest Fire. BuzzFeed News. URL (https://www.buzzfeed.com/whitneyjefferson/celebrities -are-speaking-out-about-the-amazon-fire).

- Johnson, J., 2019. #PrayForAmazonia Goes Viral as Twitter Users Call Attention to "International Emergency" of Fires Devastating Brazil's Rainforest. Common Dreams. URL (https://www.commondreams.org/news/2019/08/20/prayforamazon ia-goes-viral-twitter-users-call-attention-international-emergency (accessed 9.15.20).
- Justice and Conservation Observatory, 2020. Fires in the Atlantic Forest exceed 13% last year. URL (https://www.justicaeco.com.br/en/focos-de-queimadas-na-mata-atlant ica-superam-em-13-indices-do-ano-passado/).
- Keating, D., 2019. Macron's Mercosur Veto Are Amazon Fires Being Used As A Smokescreen for Protectionism? Forbes. URL (https://www.forbes.com/sites/dave keating/2019/08/23/macrons-mercosur-veto-are-amazon-fires-being-used-as-a-smo kescreen-for-protectionism/) (accessed 9.16.20).
- Keystone-SDA/dos, 2019. Petition handed in opposing Switzerland-Mercosur trade deal. SWI. URL (https://www.swissinfo.ch/eng/politics/amazon-burning_petition-han ded-in-opposing-switzerland-mercosur-trade-deal/45194216) (accessed 12.11.20). Latuff, C., 2019. Captain Chainsaw. Bras. Fato.
- Lees, A.C., Attwood, S., Barlow, J., Phalan, B., 2020. Biodiversity scientists must fight the creeping rise of extinction denial. Nat. Ecol. Evol. 4 (11), 1440–1443.
- Leeuwen, B. van, 2019. Political Cartoons: Brazil's Bolsonaro sets conditions for Amazon aid. Mercur. News.
- Lo, J., 2021. 'Star Wars without Darth Vader' whythe UN climate science story names novillains. Clim. Chang. News. URL (https://www.climatechangenews.com/2021 /01/12/star-wars-without-darth-vader-un-climate-science-story-names-no-villain s/).
- Lunstrum, E., 2014. Green militarization: anti-poaching efforts and the spatial contours of Kruger National Park. Ann. Assoc. Am. Geogr. 104, 816–832.
- Macron, E., 2019. Tweets (@EmmanuelMacron). URL (https://twitter.com/Emmanue lMacron/status/1164617008962527232).
- Marcatelli, M., Büscher, B., 2019. Liquid violence: The politics of water responsibilisation and dispossession in South Africa.

Marijnen, E., Vries, De, Duffy, R, L., 2020. Conservation in violent environments: introduction to a special issue on the political ecology of conservation amidst violent conflict. Polit. Geogr.

- Massé, F., 2018. Topographies of security and the multiple spatialities of (conservation) power: verticality, surveillance, and space-time compression in the bush. Polit. Geogr. 67, 56–64. https://doi.org/10.1016/j.polgeo.2018.10.001.
- Massé, F., Margulies, J.D., 2020. The geopolitical ecology of conservation: the emergence of illegal wildlife trade as national security interest and the re-shaping of US foreign conservation assistance. World Dev. 132, 104958.
- McDonald, R.I., Chai, H.Y., Newell, B.R., 2015. Personal experience and the 'psychological distance' of climate change: an integrative review. J. Environ. Psychol.
- 44, 109–118.Miller, J.R., 2005. Biodiversity conservation and the extinction of experience. Trends Ecol. Evol. 20, 430–434.
- Myers, N., Mittermeier, R.A., Mittermeier, C.G., Da Fonseca, G.A.B., Kent, J., 2000. Biodiversity hotspots for conservation priorities. Nature 403, 853–858.
- Nabhan, G.P., 1995. The dangers of reductionism in biodiversity conservation. Conserv. Biol. 9, 479–481.
- NASA Earth Observatory, 2020. Fire in the Pantanal. URL (https://earthobservatory. nasa.gov/images/146409/fire-in-the-pantanal).
- NASA Earth Observatory, 2019. Fires in Brazil. URL (https://earthobservatory.nasa. gov/images/145464/fires-in-brazil).
- Newell, B.R., Pitman, A.J., 2010. The psychology of global warming: improving the fit between the science and the message. Bull. Am. Meteorol. Soc. 91, 1003–1014.
- Nguyen, T., 2019. People have donated millions to fight the Amazon fires. Will the money help? Vox. URL (https://www.vox.com/the-goods/2019/8/27/20835154/a mazon-fires-charity).
- Nielsen, K.S., Clayton, S., Stern, P.C., Dietz, T., Capstick, S., Whitmarsh, L., 2020. How psychology can help limit climate change. Am. Psychol. 76, 130–144.
- Nixon, R., 2011. Slow Violence and the Environmentalism of the Poor. Harvard University Press.
- Observatório do Clima, 2020. The worst is yet to come.

Online Athens, 2019. Bolsonaro Prepares to Send Army to Contain Amazon Fires. Online Athens News. URL (https://eu.onlineathens.com/news/20190823/bolsonaro-pre pares-to-send-army-to-contain-amazon-fires) (accessed 12.11.20).

- Peluso, N., Watts, M. (Eds.), 2001. Violent environments. Cornell University Pressr, Ithaca, Ithaca.
- Pereira, A., 2019. Amazon fires: Jair Bolsonaro faces mounting political backlash in Brazil – even from his allies. Conversat. URL (https://theconversation.com/amazonfires-jair-bolsonaro-faces-mounting-political-backlash-in-brazil-even-from-his-allies-122512).
- Poushter, J., Huang, C., 2019. Climate Change Still Seen as the Top Global Threat, but Cyberattacks a Rising Concern. Pew Res. Cent. URL (https://www.pewresearch.org /global/2019/02/10/climate-change-still-seen-as-the-top-global-threat-but-cybe rattacks-a-rising-concern/).

Pyle, R.M., 1993. The thunder tree. Armbrecht-Forbes, A., Forbes, P.,.

- Rainforest Alliance, 2019. Amazon Fires: Crisis Mobilization Update. Rainforest-alliance. org. URL (https://www.rainforest-alliance.org/articles/an-update-on-our-crisis-re sponse-to-the-amazon-fires#:~:text=A> heartfelt thank you to,response activities are described below.
- Rajão, R., Jarke, J., 2018. The materiality of data transparency and the (re) configuration of environmental activism in the Brazilian Amazon. Soc. Mov. Stud. 17, 318–332.
 Rayner, S., Malone, E.L., 2001. Climate change, poverty, and intragenerational equity:
- the national level. Int. J. Glob. Environ. Issues 1 (2), 175–202.
 Reuters, 2019. Igniting global outrage, Brazil's Bolsonaro baselessly blames NGOs for Amazon fires. CNBC. URL (https://www.cnbc.com/2019/08/22/brazil-jair-bolsonar
- o-baselessly-blames-ngos-for-amazon-fires.html). Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin III, F.S., Lambin, E., Lenton, T. M., Scheffer, M., Folke, C., Schellnhuber, H.J., 2009. Planetary boundaries: exploring the safe operating space for humanity. Ecol. Soc. 14 (2).
- Rudiak-Gould, P., 2013. "We have seen it with our own eyes": why we disagree about climate change visibility. Weather. Clim. Soc. 5, 120–132.
- Saad-Filho, A., Boffo, M., 2020. The corruption of democracy: Corruption scandals, class alliances, and political authoritarianism in Brazil. Geoforum.
- Schreiber, M., Fellet, J., 2019. Amazônia precisa de "soluções capitalistas", diz ministro do Meio Ambiente. BBC News Bras. URL (https://www.bbc.com/portuguese/bras il-49363387).
- Seddon, P.J., van Heezik, Y., Berkoff, M., 2013. Reintroductions to 'ratchet up'public perceptions of biodiversity: reversing the extinction of experience through animal restorations. Ignoring Nat. No More Case Compassionate Conserv. Univ. Chicago Press, Chicago, pp. 137–151.
- Silvério, D., Silva, S., Alencar, A., Moutinho, P., 2019. Technical note Amazon on fire. Slater, C., 2002. Entangled Edens: visions of the Amazon. Univ of California Press.
- Smith, T., 2019. Are the Amazon fires a crime against humanity? Conversat. URL (https://theconversation.com/are-the-amazon-fires-a-crime-against-humanity-122738).
- Soga, M., Gaston, K.J., 2016. Extinction of experience: the loss of human-nature interactions. Front. Ecol. Environ. 14, 94–101.
- Spring, J., Eisenhammer, S., 2019a. Brazil space research chief to leave job after Bolsonaro deforestation spat. Reuters. URL (https://www.reuters.com/article/us -brazil-environment-job/brazil-space-research-chief-to-leave-job-after-bolson aro-deforestation-spat-idUSKCN1US20H#;~:text=Brazil) space research chief to leave job after Bolsonaro deforestation spat.-Jake Spring%2C Stephen.
- Spring, J., Eisenhammer, S., 2019b. Exclusive: As fires race through Amazon, Brazil's Bolsonaro weakens environment agency. Reuters.
- Stuenkel, O., 2019. Why the EU-Mercosur Deal Hinges on Germany's Reaction to Bolsonaro. Am. Q. URL (https://www.americasquarterly.org/article/why-the -eu-mercosur-deal-hinges-on-germanys-reaction-to-bolsonaro/).
- Taylor, C., 2019a. Leonardo DiCaprio-backed charity pledges \$5 million to reduce Amazon rainforest fires; G-7 joins in. CNBC. URL (https://www.cnbc.com/2019/08/ 26/leonardo-dicaprio-pledges-5-million-to-reduce-amazon-rainforest-fires.html).
- Taylor, C., 2019b. Brazil leader wants an apology before accepting \$22 million fund to fight Amazon fires. CNBC. URL (https://www.cnbc.com/2019/08/27/brazil-rejec ts-22-million-g-7-fund-aimed-at-controlling-amazon-fires.html).
- Irfan, U., 2019. Why it's been so lucrative to destroy the Amazon rainforest. Vox. URL (https://www.vox.com/energy-and-environment/2019/8/30/20835091/amazon -rainforest-fire-wildfire-bolsonaro) (accessed 12.11.20).
- Ungarino, R., 2019. The Amazon rainforest fires are shaping the G7 summit, where world leaders like Trump and Macron are convening. Bus. Insid. URL (https://www.busine ssinsider.nl/amazon-rainforest-fires-quickly-shaping-g7-summit-with-trump-macro n-2019–87international=true&r=US).
- Voiland, A., 2019. Reflecting on a Tumultuous Amazon Fire Season. NASA Earth Obs. URL (https://earthobservatory.nasa.gov/images/146355/reflecting-on-a-tumultu ous-amazon-fire-season).
- Tyner, James A., 2016. Violence in capitalism: Devaluing life in an age of responsibility. U of Nebraska Press.
- Wang, S., Leviston, Z., Hurlstone, M., Lawrence, C., Walker, I., 2018. Emotions predict policy support: why it matters how people feel about climate change. Glob. Environ. Chang. 50, 25–40.
- Watts, J., 2019. Jair Bolsonaro claims NGOs behind Amazon forest fire surge but provides no evidence. Guard. URL (https://www.theguardian.com/world/2019/au g/21/jair-bolsonaro-accuses-ngos-setting-fire-amazon-rainforest).
- Wig, A., 2019. 'If the Earth Dies, So Do We': Netizens On Amazon Rainforest Fire. The Quint. URL (https://www.thequint.com/news/environment/twitter-reacts-to -amazon-rainforest-fire) (accessed 9.17.20).
- Winter, Y., 2012. Violence and visibility. N. Polit. Sci. 34, 195–202.
- Witter, R., Satterfield, T., 2019. Rhino poaching and the "slow violence" of conservationrelated resettlement in Mozambique's Limpopo National Park. Geoforum 101, 275–284.
- Woodyatt, A., 2019. The Amazon burns. But another part of Brazil is being destroyed faster. CNN. URL (https://edition.cnn.com/2019/09/22/americas/brazil-cerrado-so y-intl/index.html).
- Ybarra, M., 2018. Green wars: conservation and decolonization in the Maya forest. Univ of California Press.