Assembling Amazon Fires through English Hashtags. Materializing Environmental Activism within Twitter Networks

Karin Skill1*, Sergio Passero2 & Marie Francisco3

1*The Department for Management and Engineering (IEI), Linköping University, 581 83 Linköping, Sweden (E-mail: Karin.skill@liu.se); 2Nordic Institute of Latin American Studies (LAI), Stockholm University, SE-106 91 Stockholm, Sweden (E-mail: sergiopassero@gmail.com); 3Department for Thematic Studies, Environmental Change, Linköping University, 581 83 Linköping, Sweden (E-mail: marie.francisco@liu.se)

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Abstract. This paper is about the networks around the fires in the Brazilian Amazon forest during 2019 in tweets with the English hashtags #PrayForAmazonas, #ActForTheAmazon and #AmazonFire. We have studied 2517 tweets. Both the languages and the content of the tweets were taken into consideration to see who is assembled and what discursive elements are used in the framing. Our results indicate that the fires are framed as a global concern, beyond the Brazilian borders, especially as ‘the lungs of the world’. The framing of responsibility for the fires is focused on president Bolsonaro, who is assembled in many tweets, while animals and indigenous people are framed as victims. We conclude that the tweets in English tend to produce more relationships in terms of likes and retweets, in comparison to tweets in Portuguese and Spanish. In addition, the role of politicians and celebrities seems critical in getting traction around a hashtag and making it trending.

Keywords: Activism, Amazon rainforest, Climate change, Environmentalism, Framing, Latin America, Social media, Twitter

1. Introduction

The transnational character of environmental issues has been raised for decades (Dryzek 2013; Tsing 2005), and humans are even affecting the global climate (Malm and Hornborg 2014). Simultaneously social media are developing globally and may change political practices. However, these processes do not affect all humans equally (ibid.), and people need digital competence to participate in this public sphere. Several commentators expected social network sites to herald more participatory politics, while others have highlighted that ‘a small tech-savvy elite … gain influence at the expense of the majority’ even if this is not necessarily the same as the traditional political elite (Gustafsson 2013, p. 16). This is interesting as regards to social networking and participation and encourages us to study whose voices are
retweeted and shared, as the public is not only a media audience, but producers of content (Dahlgren 2014).

While several studies of social media use have focused on social movements and the coordination of resistance in the streets (Tufekci 2017; Blackstone et al. 2017; Gerbaudo 2012), not as many have examined environmental movements, according to Pang and Law (2017). In August 2019, the news about fires in the Amazon rainforest started to spread on social media. The TV media channel funded by the Venezuelan (Bolivarian) government @teleSUR usually broadcasting in Spanish, picked up an English hashtag in their tweet in Spanish that can be translated as: ‘The green lung of the world is at the verge of disappearing completely due to uncontrolled exploitation and the fires. the Amazon is extinct and the government of #Brazil stands idle. Will someone do something to stop this environmental crime? #PrayForAmazonas’ (August 21, 2019). This is a call for action including an allocation of responsibilities for causing the fires and solving them. The tweet was accompanied by a video that since has been watched more than 89,000 times. Similarly, French president @EmmanuelMacron tweeted on August 22, 2019 in English that: ‘Our house is burning. Literally. The Amazon rain forest – the lungs which produces 20% of our planet’s oxygen – is on fire’ and he called on the members of the G7 Summit to discuss it with the hashtag #ActForTheAmazon’. President Macron metaphorically included the Amazon in his ‘house’, (and he also paraphrased Swedish climate activist Greta Thunberg who stated that ‘our house is on fire’ some months before at Earth Day). His statement emphasizes the globally networked character of climate and environmental politics enabled by social media. We are interested in how events such as the Amazon fires can gain momentum and trigger simultaneous online and offline engagement nationally and internationally. Focusing on content and types of use are in line with the shift in social media research away from examining frequency only (Pang and Law 2017). We take a social media network to encompass a set of interactions between individuals, organizations, discursive elements, and digital media infrastructure.

The internet contributes to understanding contemporary society with new methods and data (Caliandro 2017). Engagement in social media is part of everyday life, and networked social media facilitate global interactions. The exposure on the web of what may seem a national event (the fires) makes it possible for different ideological positions to transcend the event itself and challenge the sovereignty of a nation state, in this case Brazil, over the control of its territory. Furthermore, this national-international perspective on politics and activism partly overlaps with the interest in different uses of languages, and especially with the use of English as lingua franca (Ribeiro and Escobar 2006). Studying the tweets that originate from users from many geographical places and from confronting social standpoints can show how activism through the posting and sharing of tweets spreads and materializes. We take as a point of departure that the focus on materialization can transgress boundaries made between online and offline activism (Tufekci 2017).
How does environmental activism materialize in an era of social media, and what benefits are given by a lingua franca? This approach calls for a focus on English hashtags where the tweets are written in different languages, their popularity and content of the tweets, and different frames in the hashtags under scrutiny. In other words, we seek to uncover how English hashtags are reappropriated by different linguistic communities to spread their message on social media.

1.1. Aim and Research Questions

The aim of this paper is to investigate the networking and materialization on social media concerning the fires in the Amazon rainforest during August 2019. The research questions are both qualitative and quantitative:

- What participation and interaction can be measured in tweets with the hashtags about the fires in Amazonia?
- What central frames can be identified in the networks regarding responsibility for the fires and what actions to take?
- How are English hashtags materializing activism in multi-language speaking context, and what are the consequences of these networks?

2. Entangled Methodological and Theoretical Considerations

The theories and methods used in this paper are tightly entangled, and we tackle them simultaneously. We start by measuring the connections in the networks that are established by tweeting content, including words, memes, photos, videos and emojis between Twitter users through publishing, liking, and retweeting. Political communication on Twitter focuses on making themes a trending topic (Bruns et al. 2016; Pond and Lewis 2019), rather than the possibility of interacting and dialoguing with followers (Amado and Tarullo 2015). Social networks and the discursive framings can direct people towards specific protest events by providing participants with suggestions and instructions on how to act, and with emotional narratives to sustain their union in the public space. In these networks, hashtags facilitate the search and finding of tweets for users (Blackstone et al. 2017). In this sense, the act of twittering or retweeting something is considered as materialization of activism.

Even if mobilization may take shape in many languages, a bias towards English ‘could be inherent to Twitter itself’, according to Peña-Araya et al. (2017, p. 23) and a lingua franca. We study the tweets, with the hashtags in English, but explore whether they are written in different languages as part of the content. While acknowledging the limitations lingua franca can represent for activists who do not comprehend English in this case (Smith 2012), we use it to assess the global-local, or national-international dynamics and to see how Twitter users use and adapt English hashtags to their context and with content in different languages. We further
recognize that Spanish and Portuguese can be regarded lingua franca in relation to indigenous languages over the continent, but this is not explored here.

The attention given to the Amazon fires in August 2019 on social media represents our case. The first hashtag that was selected for this analysis was #PrayforAmazonas since we noticed how the news station TeleSur, with a Spanish speaking audience and a mission to gather ‘the communities of the South … a geopolitical concept that promotes the struggle of the communities for peace, self-determination, respect for Human Rights and social justice’ according to their own webpage, used this English hashtag, which sparked our interest. Then we decided to include #ActfortheAmazon since we noticed that alternative ways to frame the fires were presented there, and it was also the hashtag used by French President Macron. There were several different hashtags referring to the fires, but we decided to include #AmazonFires as well since it is in English and generic. The apparent neutrality of this hashtag makes it a valuable comparison to the previous, more action-oriented hashtags. To study the degree of interaction of tweets, we focus on their popularity, understood as the number of likes received, and dissemination through retweets (Boczkowski and Mitchelstein 2012). We consider as such that a high number of likes and retweets signify strong popularity and interaction. At the same time, the linguistic dimension of the content is relevant. Analyzing the languages will allow us to see the convergences and divergences of content. The language will not necessarily say something about Twitter users’ location but will be a proxy to say something about the political arena. Visualizing the differences in content and linguistic selection for different audiences enables us to show how languages work in the materialization of activism where English can be a double-edged sword: very practical to reach people globally and gather support even outside of Brazil, but invisibilizing other languages and maybe cultures, while English can also be re-appropriated and adapted to local/national context with hashtags. Analyzing content, language and location is coherent with recent research on social media activism (Ince et al. 2017).

2.1. Sample Selection and Material

For the content analysis we have manually harvested a set of 1000 tweets with the hashtag #PrayForAmazonas and 1000 tweets with #AmazonFire. Concerning #ActForTheAmazon, only 517 relevant tweets could be selected, as seen in Table 2. Data collection started from August 31, 2019, working our way backwards. The date was selected due to the method of extracting tweets manually. By August 31, the activity had been reduced at Twitter, but the fires were still burning, and organizations were still calling to mobilize for demonstrations or to donate money. The different hashtags were typed in the Twitter search bar. This method implies that we used no filter, and it differs from other methods where 10% of the tweets are extracted (see Ince et al. 2017).

To measure participation, data from the Observatory on Social Media (University of Indiana) was used (n.d.): all the tweets containing at least one of the three selected
hashtags that met the condition of simultaneously having 5 likes, 5 comments and 5 retweets were quantified. We decided to follow this rule in our sampling selection, to ensure reasonable level of popularity from the tweets (Bakhshandeh et al. 2011). The selection is presented as a necessary condition to establish the days with the largest number of social interactions and user participation. This interaction is related to the activities to make the hashtags to materialize as a trending topic.

2.2. Qualitative Coding and Analysis of Assembled Discourses

The qualitative coding of the tweets has been inspired by both theoretical insights on framing (Benford 1993; Druckman 2001; Pond and Lewis 2019; Ganz 2011), and previous studies of the development of global environmental movements and discourses (Bäckstrand and Lövbrand 2019; Dryzek 2013; Vara 2013). Previous studies of environmental discourses highlight a mix of scientific facts, justice claims, and emotions being addressed. Depending on how the issue is framed different calls to action are made. We have attended to the emojis and illustrations as well since they are both part of emotional expressions (Jasper 1997) and discourses, like an emoji of the planet or a broken heart. We have not coded ironic illustrations like dinosaurs or movie characters, but we highlight discussions about fake news in the analyzed tweets. The videos have been coded in a similar way as the images.

The codes were first identified in an open manner and discussed in the team. The coding was inspired by the different environmental discourses found in previous research regarding the use of scientific facts, responsibility and justice, and what action is called for (Dryzek 2013; Vara 2013). The codes were counted in the different hashtags and the three most prevalent frames will be presented here: The Amazon as ‘lungs of the world’; political responsibility for the fires and specifically that of president Bolsonaro; and the lament for victims like animals and indigenous people. While many of them are common among the three hashtags, some aspects are typical to one hashtag or even one language, which we will detail below. The two first frames that we have identified can be interpreted in the context of a major trade agreement on June 28, 2019 signed by Mercosur and the EU that situates the fires in a geopolitical setting.

The methodology implies an analysis in several steps and is both quantitative and qualitative, since we counted language, likes and retweets, as well as coded the content of tweets. We counted and analyzed the languages used in the tweets. This method allowed us to assess whose voices have been disseminated the most. Finally, we coded the content of the sample according to theme and discursive elements/frames that have been assembled. When it comes to coding and analyzing the content and discourses in the tweets, we relied on previous works that identify how issues are framed, including a Latin American, anti-imperialist framework present in environmental controversies that encourages collective action (Vara 2013). The discourse is composed of a narrative matrix that connects four elements: a natural resource presented as very valuable, a group of exploited people, foreigners who are
exploiting (often a corporation), and local accomplices (Vara 2013, p. 10). To give an example of this we can use the tweet by TeleSur mentioned above – it frames the fires as a ‘crime’ and as ‘uncontrolled exploitation’, which is like the framework argued by Vara. This justice discourse which focuses on collective action against an identified perpetrator, can be contrasted with a discourse about green governmentality that builds on statistics, satellite images, state representatives and experts (Bäckstrand and Lövbrand 2019). This discourse contends that political decisions should draw on scientific data, while states and experts are to be the main decision-makers, albeit monitored by, and reporting to, international bodies (typically the United Nations Framework Convention on Climate Change), or scientific institutions. It can be exemplified by President Macron’s tweet when he mentioned how many percentages of oxygen the Amazon is producing and when he called on the G7 national representatives to act. There are several other environmental discourses, but for the sake of clarity we only address two here (Dryzek 2013).

Framing concerns how Twitter users interpret, diagnose, and define problems, propose solutions, and call to act (Benford 1993). In this setting we agree that: ‘members of a public are not kept together by direct interaction, but by a social imaginary (or a discourse) created and re-elaborated by the members themselves’ (Caliandro 2017, p. 14). These discourses and framings are part of the materialization. Frames name experiences “as problems or grievances … and involve a locus of blame” (Ganz 2011, p. 281) that encourage individual or collective action. It is however important to highlight the differences between hashtags and action frames, as explicated by Pond and Lewis (2019). Hashtags are genre defining discourses through which action frames may be contested and negotiated. To give an example of how we coded the content and the diagnostic by the Twitter user, we consider that there is a difference between accusing/identifying Brazilian president Bolsonaro and his political decisions as responsible for the fires due to clearing the land for soy or cattle, on the one hand, and framing global climate change as causing the fires, on the other, where individual actions like changed diet are proposed or state actors are encouraged to make better policies. We will explore if there are combinations of the mentioned frames for action identified by Vara (2013) and Bäckstrand and Lövbrand (2019), and hashtags and languages. Since Vara connects the anti-imperialist frame to Latin America, we make a hypothesis that it will be prevalent in tweets in Spanish and Portuguese, while the tweets in English will not, but instead relate to the green governmentality discourse.

3. Measuring Tweets and Identifying Different Frames

In our dataset typical tweets are accompanied by images and includes emojis. The predominant images are photos of burning forests, satellite maps of the Amazon demarcating the area of the fires, but there are also wounded animals, and indigenous groups. The news content assembled in the tweets are primarily from traditional media, like BBC, or environmental organizations or associations. The artistic
illustrations enrich the content and the 280-character limit of tweets, with different discursive elements. A widespread characteristic of shared images is the use of editing techniques such as attaching texts or giving the rainforest the shape of lungs, or a monkey. Another technique is the composition of various photographs. Related to the latter, are the memes and drawings made in an ironic or dramatic way that seek to establish a moral message. The trope of the Amazon rainforest as the lungs of Earth, as developed below, is present both in artistic illustrations and scientific descriptions. The creativity is also critiqued, and sometimes framed as “fake news”. However, we consider that this combination responds to a creative use of activism rather than the quest to deceive people. The retouching of images serves as creative appropriation to establish an argument and assumes an emotional and political position regarding the fires, regardless of whether they correspond to the Amazon or not.

3.1. Measuring the Tweets

As explained previously we have investigated the day that the different hashtags had the highest level of interaction. Figure 1 shows that the hashtag #PrayForAmazonia precedes the other ones that started on August 20. The hashtag that gets the most activity is a similar hashtag #PrayforAmazonas, that only differs slightly in phrasing the ending. In the case of #ActfortheAmazon, the first tweet was published on August 20, and the highest interaction took place on August 23, where French president Emmanuel Macron’s tweet in English on August 22 gathered the highest number of reactions. The second and third most popular tweets are respectively the same tweet written in French by Macron, and Canadian president Justin Trudeau who shared Macron’s tweet and supported it. We consider that they are part of the geopolitical context where different frames entrenched in the tweets encourage specific actions to take (particularly in relation to the EU-Mercosur agreement). The following hashtag co-occurrence was identified: out of the 1000 tweets with #PrayForAmazonia 88 co-occurred with #AmazonFire, 6 with #ActForTheAmazon, and 79 with #AmazonasEnLlamas (‘Amazonas in flames’). 45 out of the 517 #ActfortheAmazon co-occurred with #PrayForAmazonas, 53 with #AmazonFire, and 26 with #AmazonasEnLlamas.

The busiest day, in relation to the number of tweets, likes and comments for #AmazonFires was August 22, while August 21 was the day with the highest number of retweets coinciding with the #PrayforAmazonas trending topic conversion. It encouraged more activity in #AmazonFire, especially from users committed to environmental interests. After August 23, the interaction fell dramatically.

Since Twitter is expected to be an arena for sharing opinions among wide segments of society, where users are producers of news, it is important to highlight how people who are not obviously famous or celebrities interact, just as well what languages they use. We have coded the tweets for the language used in the content and then counted the number of tweets per language. The following picture emerged,
and please notice that only the most common languages are presented, which means that it is not the total sample. We will refer to other languages in the presentation of the frames when deemed relevant, since they point at the global dimension.

We see in Table 2 that fewer English tweets gathered more likes than the tweets in Portuguese with the hashtag #ActForTheAmazon, and tweets in English gathered the highest average of likes in all three. Portuguese produced more reactions with the hashtag #ActForTheAmazon than the other two hashtags under scrutiny.

When counting the number of likes and retweets per language we see that tweets in Spanish get the lowest number of likes. Thai was a language that appeared, and even if it was not among the more common languages in the selection of tweets, they got a high number of likes and retweets, the most with #PrayForAmazonas. One of the tweets with the highest amounts of likes and retweets on August 22 is from Peruvian Mishell Torres’s account and is in Spanish. It refers to the proverb that can be translated as follows in English: ‘Only when the last tree has died, and the last river been poisoned, and the last fish been caught will we realize we cannot eat money.’ It got 9600 retweets and 10,600 likes, #Amazonia and #amazonasenllamas are added to the tweets. Another tweet by the same account about the fires in the Amazon on August 25 only got 3 likes and was retweeted 4 times. The lament present in this popular tweet will be addressed in the corresponding section.

In the process of conversion and maintenance in trending, several tweets contained accusations before August 21 and after August 23 that despite the increased activity and numerical participation in the hashtags about the fire over others, Twitter continued to keep them in lower positions without considering them trending. These accusations towards Twitter were like those made against established
mass media, and relevant in the light of considering Twitter a platform where everyone can share and voice opinions.

3.2. The “lungs of the world” in a Geopolitical Framing

The framing of the Amazon forest as the “lungs of the world” is common among all three hashtags analyzed in this article. A typical tweet presents a picture of smoke over a forest or the forest shaped in the form of a lung. For example, in a tweet in Spanish from August 22 the Argentine football player Paulo Dybala wrote as follows (translated to English): ‘The Amazon is not only for South America, it belongs to everyone. Its forest is the lungs of the Earth, they give 20% of the oxygen to our planet’ (emoji of the planet) #PrayForAmazonas @PauDybala_JR. It got 46,900 likes and 16,900 retweets. The tweet presents the Amazon rainforest as belonging to everyone, it contains statistics regarding the percentage of oxygen that it produces and the emoji of the planet, and it is written by a celebrity. Thereby, it resembles the very popular tweet mentioned in the introduction by French president Emmanuel Macron. With #ActForTheAmazon said tweet got 156,300 likes, 30,200 comments, and 55,600 retweets. However, some tweets question the truth about the illustration, e.g. that the photographer of the photo used supposedly died in 2003 and that it was fake in the sense that it was not the current fire that was represented. A desire for accuracy is also part of the framing, not the least by referring to satellite images from NASA that help in detecting fires.

Representing the Brazilian rainforest as the lungs of the world that is threatened by deforestation and thus affecting the global climate has been present since at least the 1980s, when Brazilian activists, who fought to preserve the rainforest in opposition to cattle ranchers, received international attention (Revkin 2004). Viewing the Brazilian rainforest as a common global good (the lungs of the world) enables international mobilization. This is also reflected in the linguistic variety of tweets depending on the different hashtags, which indicate that it is not a local/national issue but a global and international one. This is particularly interesting for comparison with the Latin American discursive framework, as presented by Vara (2013). The Amazon is presented as a global good, beyond national Brazilian sovereignty like the widely liked and retweeted message by French president Macron. Interestingly, several tweets also highlighted the so-called hypocrisy of Macron, as his actions for the Amazon were deemed insufficient and contradictory.

Macron was the one to make the hashtag #ActfortheAmazon trending, since he wrote both in English and French and since the tweets were shared by the accounts of many French embassies in the world and in different languages. On the one hand, being public people, it is used as a way of self-promotion, but also, by influencing public opinion, it claims the problem as important, generating greater interaction, participation and activity linked to the hashtags.

By framing the Amazon as a common good, within the Brazilian borders, other political actors can exclude themselves from the problem, while still politicizing it.
and portraying themselves in a positive light. However, a set of tweets regards fires in
the Bolivian part of the Amazon. These are sometimes accompanied by rather heroic
images of then Bolivian president Evo Morales as extinguishing the fires, which is
interesting in relation to the way president Bolsonaro is framed as contributing to the
fires by supporting deforestation for cattle grazing and as ideologically distinct from
Morales. But other tweets are critical towards a new Bolivian legislation that
facilitated the burning of land and contradicted the image of Morales as caring for
nature. Several tweets further framed the fires as a global problem, and mentioned
fires happening elsewhere, namely in Bolivia, Colombia, and Sub-Saharan Africa.
There were also tweets that compared the mobilization to reconstruct Notre-Dame in
Paris after the fire in 2019, and the lack of similar ambitions for the Amazon. The
framing of the Amazon as a global problem is shown in a popular tweet on August 22
by Paul Ziemiak, secretary general of the CDU party in Germany, and which referred
to rethinking the EU-Mercosur free trade agreement. It said: ‘Terrible pictures from
#Brazil. The international community must now act in unison to stop the destruction
of the rainforest. This is not just about any forest: it is about the “green lung” of
humanity & the preservation of creation. #AmazonFire #Amazonas.’ This is the
geopolitical frame where national sovereignty is made a global issue.

3.3. Brazilian President Bolsonaro as Responsible?

Another common way to frame the fires in our dataset was to demand Brazilian
president Jair Bolsonaro to be held accountable. The content in the hashtags may be
framed in different ways according to languages used. In the case of #AmazonFires
for example, users who wrote in English aimed to pressure national politicians in two
directions. First, seeking to accuse the Brazilian government of the ecological
disaster. Secondly, to question the EU-Mercosur agreement signed in July 2019,
which was associated with encouraging burning the forest to annex farmland and
grazing land. Several of these messages were expressed in German and French,
which indicates that they frame it as an issue of European relevance. Spanish and
Portuguese speaking participants focused on the political responsibility for the
fires.

This indicates the geopolitical context where the tweets were produced and
circulated beyond the Latin American continent. The focus on politicians and
presidents also concerns the Brazilian minister of environment, Ricardo Salles who
is represented as responsible for the fires (or at least not a guardian of the environ-
ment). In this respect, some tweets in Portuguese concurrently used the hashtags
#foraBolsonaro and #foraSalles (‘Bolsonaro out’, and ‘Salles out’, our translation).
On several occasions, Twitter users at #ActfortheAmazon demanded state leaders
and rich celebrities to act and protect the Amazon. Capitalism and the current
economic system were also framed as the reason why the Amazon is being
destroyed. As such, many tweets demanded accountability and actions from states
and economic leaders.
Previous research has highlighted how celebrities use social media to maintain their image (Marwick and boyd 2011). A series of public people, celebrities, took importance in the three hashtags under scrutiny here. The ‘debate’ between President Macron and President Bolsonaro was widely shared. Those who accused Bolsonaro of the fires linked him to right-wing, capitalist and extractivist policies, or mentioned that he had accused NGOs and environmental groups of being responsible for the fires, as pointed out in English traditional news media The Guardian on August 21, 2019 (Watts 2019). The actor Leonardo DiCaprio was transformed into a positive symbol by donating money to help fight the fires. Finally, in some instances President Trump was associated with President Bolsonaro, suggesting that they both represent the same political interests.

Bolsonaro is identified as responsible for the fires in many tweets due to policies that enable deforestation and favoring meat and soy production. Identifying him as responsible for the fires is also part of the call for action to demonstrate in front of the Brazilian embassy. As of August 23, tweets were published that encouraged protests in front of Brazilian embassies under #AmazonFires. These initiatives were written in Spanish and did not generate significant interaction from other participants. With the hashtags #ActfortheAmazon most of the Portuguese tweets displayed offline protests taking place both in Brazil and abroad or called for joining such events. In general, they produced more reactions than other languages. The momentum around Portuguese tweets and the display of protests beyond Brazil can be interpreted as an attempt to pressure Brazilian decision makers, and a way to bolster mobilization in Brazil by displaying the support of the international community.

The call for individual actions among regular Twitter users is present among the three hashtags. For example, for #AmazonFires, the most shared tweet, with 87,000 likes and 4900 retweets, was made by @MzKatieCassidy - an American singer and actress, who also tweeted under #PrayforAmazonia. It said: ‘How to help Amazon’s burning rainforest and the charities to donate to. The Amazon rainforest is experiencing a record-breaking number of fires – they can be seen from space. Here’s what you can do to help businessinsider.com’. Another example of call of action is to donate or fund the extinction of the fires, or sign petitions. In addition, some tweets provided lists of actions one can do to help. An example is the Juliantinas, Mexican celebrities from a telenovela show. They try to raise enthusiasm for helping under this hashtag by telling people to recycle, or not use plastics (Dryzek 2013). This individualization is a different way to address responsibility and call to action than stating that a president is responsible.

Bolsonaro rejected the offer from the G7 countries about funds for extinction of the fires, and on August 23, 2019 he claimed that president Macron used the internal Brazilian issue for personal political gains and furthermore for using false images. Bolsonaro did not use any of the hashtags analyzed in this article, but in the following tweet @jairbolsonaro accused Macron of ‘colonial mentality, which is unreasonable in the 21st century’. He tweeted in Portuguese and received 22,000 retweets and 92,700 likes on the first tweet.
Established environmental organizations like WWF and Greenpeace are present but do not necessarily get a lot of likes and retweets, in this digital network. Around August 27 a series of repetitive posts with #AmazonFires began to call for signing a petition through change.org for the Colombian government to commit to helping extinguish the fires in the Colombian Amazon. This request became recurring and excessive on August 27, suggesting some sort of organized strategy or even the use of bots to simulate human activity to generate more interaction.

3.4. Lamenting Victims of the Fire

With the hashtags we find many tweets containing photos of animals, lamenting that they are threatened or killed in the fires. This was particularly common with #PrayForAmazonas where 119 out of the 1000 harvested tweets framed the fires in this way. The illustrations are of burnt/dead animals or sometimes, of colorful birds and charismatic animals. These are often accompanied by crying or heartbroken emoji, or the words mourning, heartbroken, or sad. There is also an emblematic image of a monkey with a baby in arms that seems to be screaming towards the sky, or a photo of a leopard that is rescued by a military person with the Brazilian flag on their arm. When the Twitter users are lamenting the fires, it seems as if they mainly serve as emotional consolation in a public setting. In general terms, the hashtag can be related based on emotional empathy or moral statements (c.f. Jasper 1997). Tweets about religious prayers tend to call for rain over the fires or show that rain is falling because of prayer, in later tweets. When we count the number of tweets with #PrayforAmazonia where it is most prevalent, we see that most are in English followed by Spanish, and a few in Portuguese and Thai. One tweet by @vxx17r August 23, 2019, laments: ‘Sorry Mother Nature, we don’t deserve you.’

The problem is also articulated by showcasing a number of indigenous people, particularly in the case of #ActfortheAmazon and in Portuguese tweets. Compared to #PrayForAmazonas, where animals were framed as central victims, animals are only identified as victims a few times under #ActfortheAmazon. However, in tweets with #PrayForAmazonas indigenous people who live in the Amazon forest were identified as victims too. A video that had great impact was that of a desperate and angry Pataxó indigenous woman who spoke in front of the camera with the smoke from the fire as a backdrop. From August 21 to August 23 this video received 159,600 likes, was shared 141,700 times and appeared in tweets with all three hashtags. It was shared over again in the studied hashtags, and it had an impact in media internationally.

The frame of lamenting victims was also contested. In many ways the hashtag #ActfortheAmazon was framed in opposition and as a reaction to #PrayforAmazonas. Among the tweets with the hashtags #PrayForAmazonia and #ActfortheAmazon we found examples of the word ‘pray’ crossed and replaced by ‘act,’ with the same picture of a burning forest that president Macron used, which is an illustration of how Twitter users attempted to change the framing or dispute it
As an example, on August 22 @RafNord tweeted ‘Stop #PrayForAmazonas #ActForTheAmazon NOW!!’ It got retweeted 373 times and 393 likes.

4. Analysis

Twitter has been highlighted as enabling more participatory politics through digital technology affording regular people the possibility to share opinions and connect with others in virtual communities that span the globe. The global character of environmental and climate issues has been used as a motivation for this study. However, we have showed that celebrities and famous people have played an important role in the networking and mobilization around the fires in the Amazon (see Marwick and Boyd 2011). This is prevalent in the large number of reactions gathered in the tweets of personalities such as Emmanuel Macron, the footballer Paolo Dybala, or the actress Katie Cassidy. As an example, Dybala got 46,900 likes with #PrayForAmazonas, while the average in Spanish was 372. The framing of Leonardo Di Caprio or the call for actions of the Juliantinas also demonstrate the influence of celebrities. Conversely, more established organization like Greenpeace and WWF did not manage to get a similar number of reactions to their tweets. In the analysis we will connect the results to the discourses or frames that we outlined initially. We are also interested in the materialization of online and offline activism particularly related to the different calls to action presented in different frames.

4.1. The Frames and the Content

As pointed out above, framing concerns how Twitter users interpret, diagnose, and define problems, propose solutions, and call to act (Benford 1993). When networking on social media discursive elements from previous mobilizations can be used like anti-colonial framing for collective action that has been present during the twentieth century into the 21st in environmental controversies in Latin America (Vara 2013) or framing the Amazonas as of international interest in environmental and climate politics (Revkin 2004). In this study we have identified three central frames, one of which is lamenting victims in the fire, where the call to act does not focus on identifying or accusing perpetrators. It is far from the collective action frame present in Latin American environmental controversies, as argued by Vara (2013). It is a less politicized frame than the one focused on president Bolsonaro or local accomplices. They do not identify a political or environmental controversy. Lamenting is also different from the green governmentality frame (Bäckstrand and Lövbrand 2019), since it addresses a religious community, as materialization of collective action. This kind of lamenting is also different from animal rights mobilization or activism regarding veganism. The languages used in the tweets that frame the fires as lamenting were English closely followed by Spanish, even if a larger share of the tweets in English was lamenting compared to Spanish.
Previous analysis of framing has highlighted that disputes can take place (Benford 1993). The confrontation between the contents of the hashtags #PrayForAmazonas and #ActForTheAmazon is interesting in this regard since they dispute what action to take – stop praying and start to act. In this text we argue that framing the Brazilian Amazon as ‘the lung of the world’ legitimizes interventions in national politics, by international bodies, like the G7, much in line with green governmentality. As mentioned above, there are differences between hashtags and frames (Pond and Lewis 2019), and the frames we have identified are distinguished from the three hashtags that we have analyzed. Our quantitative analysis, however, shows that the tweets published with #ActForTheAmazon are a lot more popular in terms of likes and retweets than #AmazonFires, as evident in Tables 1 and 2.

With #ActForTheAmazon the global climate discourse where the fires in the Amazon were framed as being caused by clearing of land for soy and cattle production, is prevalent (Dryzek 2013). The ‘hunger for beef’ is framed as an explanation for deforestation. This seems like the Latin American frame that Vara (2013) highlights, since she focuses on how foreign actors (often transnational corporations) are exploiting, and local accomplices are responsible for the environmental problems. The word ‘accomplice’ is hardly used in these tweets but the identification of a responsible person, particularly president Bolsonaro and the Brazilian Minister of Environment Salles in some cases, and a good of great value – the Amazon. A hypothesis was that the anti-colonial frame would be present in tweets in Spanish and Portuguese due to the Latin American context. Our analysis indicates that English hashtags are used to draw attention to tweets in Spanish and Portuguese that contain frames where Bolsonaro is made responsible – even if they do not produce as many likes and retweets as English tweets. The results of languages used for the tweets support the idea presented by Peña-Araya et al. (2017) that English is a lingua franca on Twitter.

Table 1. Number of tweets per language #AmazonFire and #PrayForAmazonas, retweets and likes.

| Hashtag          | Reaction | Spanish | English | Portuguese |
|------------------|----------|---------|---------|------------|
| #AmazonFire      | No.      | 178     | 689     | 39         |
|                  | No. of retweets | 3092 (17) | 82,084 (119) | 164 (4) |
|                  | No. of likes   | 3186 (18) | 94,979 (137) | 490 (12) |
| #PrayForAmazonas | No.      | 495     | 252     | 93         |
|                  | No. of retweets | 97,039 (196) | 78,011 (310) | 11,205 (120) |
|                  | Likes     | 184,294 (372) | 113,588 (450) | 33,377 (359) |

Number of tweets per most common languages #AmazonFire and #PrayForAmazonas, out of a 1000 manually harvested tweets per hashtag, number of retweets and likes, and average in parenthesis. Since there are tweets in other languages in the dataset, the number in the table do not equal 1000 per hashtag.
4.2. Materialization in Online-Offline Activism and Trending Topics

One of our analytical approaches concern the materialization and interaction of online and offline activism. The call to demonstrate in front of the Brazilian embassies in different parts of the world - or the showcase of such demonstrations - is a common content. It is a way to mobilize a community of activists (Tufekci 2017) and frame actions to take. These are example of online activism translating into offline actions, as well as offline actions showed online to gather momentum. The use of Twitter to politicize issues and include them in the traditional news media and political agendas further shows their complementarity and how online and offline activism overlap. In tweets where traditional news media are accused of not covering the topic, the number of days that the fires have been burning without media attention was mentioned.

When it comes to the materialization of the hashtags it is interesting, even if not surprising, that the tweets closer in time to the mobilization that made the hashtags a trending topic on Twitter, got many more likes and retweets in comparison to the tweets from later in August. As seen in Figure 1 the materialization of the network around the hashtag was not enduring but rather momentaneous, even if its building blocks were made up of discursive elements from previous environmental and political struggles. For #PrayforAmazonia for example, although the most shared and liked tweet was from August 20, the participation that the hashtag had in general on that day was low. This suggests that there was a warm-up of the hashtag before exploding on August 22, when it became massive. Another detail is that on August 22 the most active tweets through likes and retweets were by public people, like politicians (see Marwick and boyd 2011). We also note that on August 21, the tweets were by nonpublic people. Public people, like president Macron, had therefore an impact to make hashtags trending. When celebrities and politicians begin to express themselves on the subject publicly in the hashtags, this generates a feedback effect. Celebrity activity was concentrated on #prayforamazonas on August 22.

5. Conclusions

In this study we have explored how different languages are used in tweets with English hashtags concerning the fires in the Brazilian Amazon in 2019, since English
has been said to be inherent to Twitter as lingua franca. In this way we discuss materializations that this social media enables and the different discursive elements that can be found when Twitter users assemble around an environmental issue such as the fires. Tweets in English are indeed more popular across the three hashtags and in average, than the studied tweets in Spanish and Portuguese that are the three most common languages in the sample.

Twitter and other social media have been hailed for their democratic character where people can participate in political discussions and network. People all over the world engaged in the fires, constructing it as a common global/planetary problem. But as we have shown there are different ways to frame and interpret the problem in the different hashtags. The notion of Amazonia as the ‘lungs of the world’ (i.e. not only a Brazilian issue) is a discursive element in both texts and illustrations that accompany the tweets, while lamenting that animals die was central in tweets with #PrayForAmazonas, and the responsibility of Bolsonaro with lax environmental policies was mentioned in all three hashtags, along with deforestation and soy and cattle production.

In all cases, users attempted to make the topic trending and force international and media recognition. However, politicians and celebrities get more reactions than regular citizens. As a matter of fact, they are the ones that mostly seemed to contribute to make the hashtags trending.

The tweets were emotional and not just rational or scientific, and emojis and retouched pictures or art were abundantly used. Two of the hashtags got trending but maintained momentum for a couple of days only. The difficulties of sustaining the mobilization are comparable to other studies. Twitter is a privileged tool to reach people around the world and frame the discourse of media and politicians, but it is still dependent on the latter to make a topic trending.

Further research should focus on exploring the role of politicians as well as the implications of such imbalances for democracy and activism online and offline. On the other hand, we have mostly studied English, Spanish, and Portuguese content, but we have noticed that Thai tweets, even if they are not that many, get very many likes and retweets and that would be interesting to study closer. Finally, it could be interesting to compare the frames in Spanish hashtags and English hashtags to identify similarities and differences regarding frames.

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