

# The future of our common heritage: An anthropomorphic perspective on individuals' reaction to the Notre-Dame cathedral fire

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## Abstract:

Tourism sometimes suffers from dramatic events that seem to affect individually its target audience. People then appropriate these events by reacting strongly and emotionally, especially through online platforms, as when members of their social network are affected. This research studies the reactions provoked by the Notre-Dame Cathedral fire in 2019 to show how tourism marketing can take into account, in the future, the heightened emotions expressed online. Using a netnographic approach, social network analysis and sentiment analysis, we show that various actors and clusters distinguish themselves through the emotional tone of their messages.

**Keywords:** heritage, anthropomorphism, netnography, SNA, social media usage, sentiment analysis

## Introduction

Tourism is mainly related to the frequentation of sites in a leisure context. However, if we consider the attachment relationships that are created between the public and the place on which their affection is focused, impromptu and dramatic events can give rise to manifestations of this relationship. This research studies the reactions provoked by the Notre-Dame Cathedral fire in 2019. From all over the world, testimonies are pouring in on social media in reaction to the disaster. Personal emotions dominate these messages, beyond the rational attitudes that would tend to understand the causes of the fire, to offer help or to organize fundraising.

We seek to better understand the nature of these widely shared emotional reactions. We want to show that people tend to attribute human qualities to the places or sites they like the most, and that communities of conversations spontaneously form in online media for these emotions to be expressed. We present our theoretical framework in a first part, before discussing the methodology used. Then we present and discuss the results.

## 1. Conceptual framework

### 1.1. *Anthropomorphism and personification*

Based on Guthrie's (1995) view of animism, brand personification refers to consumers' tendency to attribute human life to brand (Huang & Mitchell, 2014). Humanity's personification inclination is increasing in intensity (Brown, 2010), mainly because of humankind's innate need to personify (Guthrie, 1995). For Epley et al. (2008), personification process is used to satisfy two basic needs: the need for social connection since individuals can bond with non-human entities, and the need for control since personification engages individuals in a process of understanding their environment.

Two main questions related to personification have been investigated in the marketing literature. The first one relates to when and why people are likely to personify (Epley et al., 2008). This stream of research has thus investigated notions like motivations, similarity and need for belongingness. For instance, Chen et al. (2017) show that individuals who desire to connect with others exhibit a higher tendency to humanize. The second stream of research relates to how personification affects judgments and behaviors (Aggarwal, 2004). For example, attributing human life to brand leads consumers to consider that the brand has a personality (Aaker, 1997). Likewise, an important strand of marketing literature focuses on consumer–brand relationships under the assumption that consumers can establish relationships with brands in the same way as they do with other people (Fournier, 1998). Consumers personify a brand so that they can be treated as an active ‘other’ (Alvarez & Fournier, 2016). While the notion of personification has been mainly applied to commercial brands (Cohen, 2014), we argue that it can also be applied to heritage.

According to Ashley (2005, p.5), heritage refers to “the legacy of the natural and human world that society wishes to pass on to future generations”. Heritage is an object of the public sphere that is preserved and transmitted between generations (Smith, 2006). Previous research has shown that the relationships individuals create with heritage have two dimensions: an individual dimension and a collective dimension. Regarding the individual dimension, the literature has revealed that individuals can create attachment and loyalty with heritage sites (Chen & Chen, 2010) and that such sites have an identity impact on them (Goulding & Domic, 2009) which leads people to redefine themselves (Poria et al., 2003). Regarding the collective dimension, previous research has found that heritage facilitates cohesion and solidarity within communities (Yu Park, 2010). Heritage is based on memory and communal identity through the transmission of the resulting collective memories (Goulding, 2000; Lowenthal, 1998). Until now, the literature has suggested that consumers develop strong relationships with heritage without explicitly talking about personification. Because of the very strong meanings heritage has for consumers, we believe they attribute life to heritage sites. However, while people’s relationships with heritage have been mainly studied in positive contexts through including love (Andriotis et al., 2020), attachment (Woosnam et al., 2018) and passion (Edson, 2004), the question of how consumers react when heritage sites disappear because of destruction remains unknown.

### *1.2. Individuals’ relationships with heritage and the loss of heritage*

According to Ashley (2005, p. 5), heritage refers to “the legacy of the natural and human world that society wishes to pass on to future generations”. Heritage is an object of the public sphere that is preserved and transmitted between generations (Smith, 2006). Previous research has shown that the relationships individuals create with heritage have two dimensions: an individual dimension and a collective dimension. Regarding the individual dimension, heritage attachment and loyalty with the heritage site (Chen & Chen, 2010), identity impact on consumers (Goulding and Domic, 2009) which leads people to redefine themselves (Poria, Butler, & Airey, 2003). Regarding the collective dimension of heritage attachment, previous research has found that heritage facilitates cohesion and solidarity within communities (Park, 2010). Heritage is based on memory and communal identity through the transmission of the resulting collective memories (Lowenthal, 1998). Overall, people relationships with heritage are mainly studied in positive contexts: heritage destination love (Andriotis, Foroudi and Marvi, 2020), attachment (Woosnam et al., 2018) or loyalty (Chen & Chen, 2010). But what happen when the heritage sites disappear because of destruction?

As explained by DeSilvey and Harrisson (2020, p. 1), “the destabilization of current ecological, political and economic orders is accompanied by the anticipation of accelerated and unpredictable loss in many contexts, including those related to a broad range of heritage

objects, places and practices”. Heritage is therefore subject to damage, decay and destruction (DeSilvey, 2017). However, since heritage is considered as “irreplaceable” and as a “non-renewable resource” (DeSilvey and Harrisson, 2020), the loss of heritage has detrimental consequences for individuals. For instance, studying ISIS's staging of the destruction of archaeological heritage in Iraq, Khalidi (2017) argue that such destruction aims to annihilate the local sense of belonging, and the collective sense of memory among local communities. In a tourism context, Groizard and Santana-Gallego (2018) find that the loss of heritage sites following the Arab spring has caused a minimum loss of around 12% of their tourism, with Libya and Syria being the most affected countries. However, while the impact of the destruction of heritage from an economic point of view has been studied, the impact for individuals remains largely understudied.

Because individuals develop strong relationships with heritage, we argue that the destruction and loss of heritage sites may have significant consequences. We want to understand how individuals interact online, when a dramatic event affecting one of their favorite monuments occurs. In particular, we want to see to what extent they express emotions, and which ones, as they might do in the case of an event affecting one of their relatives. We also want to know how distinct conversation clusters are formed, based on the links created because of similar feelings within the same community, around the same event.

## 2. Methodology

To answer our research question, we investigate The Notre-Dame de Paris fire that occurred at Notre-Dame de Paris cathedral on April 15 and 16, 2019, for nearly 15 hours. The fire completely destroyed the spire, the roofs of the nave and the transept as well as the framework of the cathedral. By collapsing, the arrow caused the collapse of the vault of the crossing of the transept, part of that of the north arm and that of a bay of the nave. This is the most important disaster suffered by the cathedral since its construction. Because Notre-Dame is one of the most emblematic monuments of Paris and of France, the fire caused a very strong emotion, both in France and in the rest of the world, as well as significant media coverage.

To answer the question of how individuals have reacted to the destruction of Notre Dame, we collected the messages posted on social media after the fire because it can be considered as a way for individuals to publicly express and share their emotions. We selected Twitter data because unlike other mostly closed social networks (e.g. Facebook, Instagram), Twitter is more easily accessible to researchers (Kontopoulos et al. 2013). In addition, Twitter is often used in research to understand the emotional dimensions of online conversations (Baviera et al., 2019). As the 13th largest online social network in the world, with 340 million subscribers and 513 million daily tweets (Digital Report, 2020), this medium lends itself well to this type of collection, being a free medium and open to various forms of content (written, web links, videos, emoticons, etc.). It is one of the most "conversational" networks: the actors involved identify themselves quickly and continue the conversations they have started over time. It is also a relevant medium for identifying opinion leaders and studying their influence in the conversations that materialize (Alfarhoud, 2017), and with which sentiment analysis is increasingly employed, due to the nature of the exchanges (Baviera et al., 2017).

We used a set of data collected on Twitter in April 2019 and made available on the graph gallery of the Social Media Foundation, author of the NodeXL tool, and left for researchers to use<sup>1</sup>. The collection and analysis were done with NodeXL Pro software, which captures the social network and content of online exchanges on a topic in a given platform (Hansen et al., 2020).

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<sup>1</sup> <https://nodexlgraphgallery.org/Pages/Graph.aspx?graphID=193957>



influencers are connected to other members in a particular cluster (Burt et al., 2013; Hansen et al., 2020). We keep the 9 most influential because of the break observed in their centrality ranking after the 9<sup>th</sup> (Appendix 2). Each of the main messages broadcast by the influencers expresses at least one of the emotions we have identified in the literature (Table 1):

<i>Emotion</i>	<i>Tweet</i>
<i>Shock, Sadness</i>	1: Notre-Dame de Paris <b>in flames</b> . <b>Emotion</b> of a whole <b>nation</b> . Thoughts for all <b>Catholics</b> and for all <b>French people</b> . Like all our compatriots, I am <b>sad</b> tonight to see <b>this part of us</b> burn. ( <i>Translated from French</i> ).
<i>Anger</i>	2: Masjid al-Aqsa is 128 years older than Notre Dame and is literally one of the holiest sites in Islam. Our prophet led prayers towards it and the fact that <b>everyone is ignoring this</b> says a lot about how much <b>people don't care about us</b> . <a href="https://t.co/revCkuyyas">https://t.co/revCkuyyas</a>
<i>Recovery</i>	3: Paris firefighters release <b>dramatic footage</b> of their <b>battle to save</b> Notre Dame <a href="https://t.co/jj9206H1nl">https://t.co/jj9206H1nl</a> <a href="https://t.co/i3gDn3uyLa">https://t.co/i3gDn3uyLa</a>
<i>Shock, Recovery</i>	4: My <b>heart is broken</b> over the <b>loss</b> of Notre Dame. The Catholic Church is also one of the world's <b>wealthiest entities</b> . If you are going to <b>donate</b> money to <b>rebuild</b> a church this week, I <b>implore</b> you to make it the black churches in St. Landry Parish. <a href="https://t.co/HBh4n80nT1">https://t.co/HBh4n80nT1</a>
<i>Shock</i>	5. We are all <b>familiar</b> with Notre Dame Cathedral, but last night the 8th century Al-Aqsa Mosque in Jerusalem <b>also burned</b> . <a href="https://t.co/cuOmGcPN2v">https://t.co/cuOmGcPN2v</a> ( <i>Spanish</i> ).
<i>Anger</i>	6. Victor Hugo thanks all the <b>generous donors ready to save</b> Notre-Dame de Paris and proposes them to do the same with Les Misérables. ( <i>sarcastic; French</i> ).
<i>Anger, Recovery</i>	7. More than 24 hours after yesterday's <b>terrible</b> fire at the Notre-Dame Cathedral in Paris, I would like to make a number of considerations. HILO <a href="https://t.co/G0y412qIwQ">https://t.co/G0y412qIwQ</a> ( <i>Spanish</i> ).
<i>Recovery</i>	8. RT @TIME: President Trump reacts to the Notre Dame Cathedral fire during a <b>tax day event</b> <a href="https://t.co/KhpkW9vaOL">https://t.co/KhpkW9vaOL</a> <a href="https://t.co/JoLxdppg3P">https://t.co/JoLxdppg3P</a>
<i>Shock, Anger, Recovery</i>	9. The <b>rebuild</b> of Notre Dame will be well <b>funded</b> . In the past month, three historically black churches in Louisiana were destroyed by a <b>racist</b> arsonist. He has been charged with <b>hate crimes</b> , but these churches need <b>your help</b> . <b>Please join me in donating</b> <a href="https://t.co/gj1BcNsGpu">https://t.co/gj1BcNsGpu</a>

**Table 1: main message of the top 9 influencers**

Each of them is the origin of conversations in the cluster he/she influences. Out of more than 3000 clusters, from 2036 to 2 people, only 7 have more than 400 people. They materialize the most animated conversations, which we analyze. Group 1 is not a cluster: it is a sum of 2036 individuals who tweeted a message, but did not get any feedback (response, mention). According to the sentiment analysis, it aggregates the largest number of word pairs in negative, positive or angry list, so many emotions expressed:

- Negative list: horror at the devastation, sadness, comparison to a murder.
- Positive list: help, reconstruction, donations, sanctity of the monument, unity of all in front of the drama.
- “Anger” list: in front of the fire, the collapse, or the messages of hate from other users.

### 3.2. Sentiment analysis

The feelings expressed in all the conversations of the network are analyzed thanks to the counting of top words. The words are classified in three lists, positive, negative or angry/violent. This methodology comes from linguistic research (Liu et al., 2005).

<i>Words</i>	<b>Count</b>	<b>Salience</b>	<b>% sentiment words</b>
Positive List	<b>7,436</b>	0.015	<b>42.11</b>
Negative List	<b>9,775</b>	0.019	<b>55.35</b>
Angry/Violent List	449		2.54
Non-categorized			
Words	490,705	0.966	
Total Words	507,916	1.000	3.48
Notre	19,396		3.82
Dame	18,904		3.72
Paris	2,969		0.58
Fire	2,815		0.55

**Table 2. Top words categorized in sentiment lists**

Words expressing emotions are always in the minority in a semantic network (3.48%), because of the mass of common words, stop words, linking words, adverbs, etc. This is why the analysis is related to the total number of words expressing emotions. Negative words dominate: negativeness and anger represent 57.89%. The most used words are naturally "Notre", "Dame", "Paris", "Fire", counted individually. The associated words "Notre Dame" count as much as the total of words connoting feelings, which shows the extent of these terms: a large proportion of messages are focused on the monument, seen as the object deserving to share its emotions.

The negative list includes terms related to the horror felt at the devastation, sadness and grief, sometimes comparing it to a murder. Negative connotations relate to the visualization of destruction shown in all media broadcast, the feeling of horror, the feeling of destruction of a symbol that "belongs" to all of us. The positive list is structured around words related to hope, help for reconstruction, donations, sanctity of place, unity in the face of tragedy. The positive connotations are also based on religious references, collective prayer, saved treasures, and supporting the efforts to save Notre Dame.

The content analysis of the messages counted as the most favorite confirms this tendency: they express sadness with the personification of the cathedral, the search for remembrance, hope based on promises of donations, reconstruction, relief to have saved some treasures, anger (towards the French President, other users, or the overreaction for a monument), disgust towards the users. Someone noted that many users reacted emotionally; condolence, mourning, especially on the part of Christians, personally and symbolically affected by the event. Finally, irony is present, making fun of the emotions expressed, of the announcements of donations, or even of the reactions against the current.

Cluster 2 (871 users, 1330 links) is the largest conversational community, grouped around political figures and the media, including several tweets from the French President. The emotional tone is mostly shock, sadness, and the desire to rebuild. Feelings are put forward, messages are strongly emotional. The lists of word pairs emphasize negative (seeing destruction, feeling of horror, feeling of destruction of a symbol that "belongs" to us), and positive emotions (religious references, fervent collective prayer at Place Saint-Michel, saved treasures of Saint-Louis, donations pouring in for reconstruction).

Cluster 3 (568 users, 656 links) is a mostly American community. It highlights the hope in the reconstruction thanks to technologies, or the saved stained glass windows. It is also concerned about the islamophobic theories in the social media, and compares the fire with those of churches in Louisiana, calling to give for these monuments.

Cluster 4 (480 users, 612 links) is a community significantly anchored to the far right of the French political spectrum. It shares emotions of sadness, Catholic faith, desire for reconstruction, but also a desire to find criminal culprits, preferably foreigners. We can observe the importance of terms related to the catholic faith in the positive words list.

### 3.3. *Analysis of the conversations*

The analysis of the conversations suggests that the destruction of Notre-Dame is perceived by individuals as the loss of a human being, thus indicating a process of personification of the cathedral. On the formal level, this personification can take on multiple linguistic traces including the fact of talking to the cathedral directly, the fact of calling it 'Our Lady' (the literal translation of 'Notre-Dame') or the fact of using the pronoun "she" to designate it. More fundamentally, the thematic analysis reveals five central themes in the conversations, which indicates a process of mourning.

#### 3.3.1. *Shock and denial*

Our data first shows that the news of the Notre-Dame Cathedral fire was perceived by consumers as a shock similar to if they had been told of a serious accident involving a loved one. Shock is the feeling that appears most spontaneously and quickly after the start of the fire. Learning about the fire puts people in a state of bewilderment:

*"Horried by the images of the fire devastating Notre-Dame Cathedral - a unique world heritage gem that has reigned over Paris since the 14th century. My thoughts are with the people and the French government"*

The data also seem to indicate that the shock is even stronger when individuals are attached to the monument and the city in which it is installed, Paris.

*"I love Paris. This remarkable city felt like my second home for several years. I'm shocked and heartbroken by the news of devastation wreaked upon the historical Cathedral of Notre Dame. Thoughts and love to all Parisians everywhere"*

The shock felt by consumers even leads them to very directly personify Notre-Dame, drawing an explicit parallel between the destruction of the monument and the death of a person:

*"In a way, it is a death. In the human family. We are all shocked together"*

As with the news of the death of a loved one, consumers are trying to cope with the pain that comes with shock. This reaction is marked by refusing to believe that they are losing a loved one. Under such circumstances, the human mind therefore takes some time to adjust to this new reality:

*"Still can't get over this. We always take things for granted. I remember telling Nayeem that we can just quickly go through Notre-Dame and come back some other time because there's so much to cover in Paris"*

In a way, denial slows down the grieving process. Indeed, during this stage, consumers' emotions are somewhat numbed, which allows them not to feel overwhelmed. They refuse to realize the impossible:

*"I don't really have words for how I feel about Notre Dame today, but the closest I can get is thinking about how impossible losing something as immutable and symbolic as that cathedral felt before today. It's like watching an ocean dry up, it wasn't supposed to be possible"*

In their refusal to believe the information about the loss, individuals use argument and challenge. The rejection of the information thus gives way to a discussion during which consumers seek to justify why it is not possible for the cathedral to disappear:

*"Built in 1163. Took 200 years to complete. It survived revolutions, plagues and world wars. And now, the evening of April 15th 2019, the Notre Dame in Paris"*

*burns. All history gone. The world stands helpless as history disappears before our eyes. I'm so sorry #NotreDame”.*

In this tweet, this consumer cannot believe that the cathedral is on fire after surviving so many dramatic historical events, which in a way made it immortal.

### *3.3.2. Anger and sadness*

The confrontation with the facts, i.e. with the reality of the images of the Cathedral burning, generate an attitude of revolt. This anger, which is often turned towards others, leads individuals to seek out the responsible for the tragedy:

*“Human genius built Notre Dame Cathedral. It took 180 years of construction, starting in 1163. Man's imbecility and lack of preservation destroyed much of Notre-Dame Cathedral. It was 1 day, in 2019. Destroying is much easier than building”.*

But behind this angry reaction are also hidden grief and unexpressed fears, fears of losing the Cathedral for good:

*“How we would like all our tears to form an abundant rain, a storm of anger and piety, which, at once, would stop the fire of Notre Dame!”.*

The strong emotions expressed here are forms of acceptance of the tragedy. While shock and denial suggest a reluctance to accept the loss of the cathedral, the anger and the sadness prove on the contrary that the individuals realize the drama and react to it with strong emotions:

*“The sight of Notre Dame in flames is unbearable--a painful reminder that nothing, particularly that which is of value, should be taken for granted. All can be lost”.*

By accepting the death, consumers actually begin the grieving process, i.e. they begin to embrace the idea that the cathedral was, at least in part, destroyed by fire. Therefore, along with sadness, they seek to keep the best possible image of the cathedral and to eliminate the negative and devastating images of the fire:

*“The night was difficult and the day started sadly in Paris. A sadness that words can't express. I am sure that Notre-Dame will find again its spiritual and material brilliance. This is the image I want to keep from Our Lady of Paris”.*

Some consumers even seem to think that the feeling of sadness is stronger among those who have had the opportunity to visit the cathedral, as someone will be more affected by the death of a person they have already met than by the death of an unknown person:

*“Omg Notre Dame? You mean the cathedral I visited while I was in France? Wow such a tragedy to lose this building I visited while I was in France. Truly said, can't believe I was there in France a year ago. I'm probably sadder than everyone who didn't visit Notre-Dame in France”.*

### *3.3.3. Questioning about life*

Interestingly, our data also shows that the process of mourning a heritage monument leads people to question themselves. As with the loss of a loved one, consumers may have to ask existential questions (Simko, 2015), a similar process is observed during the loss of Notre-Dame. Indeed, heritage being a common good which belongs to all and which is at the heart of identity transmission and construction mechanisms (Otnes & Maclaran, 2007), its loss causes a scar that raises many questions:

*“Why has the burning of Notre Dame moved so many? Because we believe in beauty, majesty, faith, art, history, and the human expressions thereof. We*

*recognize in this cathedral our common humanity. A scar now emerges in our connections to our past, our future, and each other”.*

As this quote suggests, Notre-Dame represents for some consumers a “common humanity”, i.e. something that brings people together and that they share. Losing part of their identity causes people to question who they are and who they can be:

*“The majesty of Notre Dame—the history, artistry, and spirituality—took our breath away, lifting us to a higher understanding of who we are and who we can be. Being here in Paris tonight, my heart aches with the people of France. Yet I know that Notre Dame will soon awe us again”.*

Beyond questioning about the cathedral and the loss that the fire can generate, some individuals use the accident to raise more general questions about the place of heritage in our societies:

*“We live in a time where increasingly we’re told art is useless and public spaces are snatched up for private corporate use or destruction and I honestly think that’s why so many people are crying over Notre Dame right now”.*

In this tweet, this consumer analyzes the importance of the collective emotion provoked by the destruction of the cathedral through an anti-neoliberalism discourse. He argues that when a society where art and public spaces are neglected in favor of private interests, the loss of a heritage monument like Notre-Dame reminds us how important they are, which explains why consumers mourn the loss of the monument as if they were mourning the loss of a loved one.

#### *3.3.4. Sharing memories*

Another way to express grief that our data has revealed is to share memories of the deceased. When a loved one dies, it is indeed common to share memories of him or her and to recall his or her life. In the case of Notre-Dame, consumers thus retrace the “life” of the monument, like a biography of the deceased:

*“Today humanity lost a priceless monument. For more than 800 years, it survived revolution, plague and world war. It inspired artists and authors like Victor Hugo and enchanted millions of tourists and today Notre Dame de Paris burns”.*

For individuals, it is also about remembering the beauty of Notre-Dame and its uniqueness, as if to better realize the loss that is actually happening:

*“Notre Dame is 850+ years old... during the summer solstice the sun filters through the glass to form a heart on the mosaic on the floor... it’s a masterpiece of medieval architecture this is heartbreaking”.*

More than remembering what life the deceased had, individuals also recall their own memories with the deceased. Interestingly, our data shows that consumers remember the first time they “met” Notre Dame, as if they had met a natural person, which is another illustration of the personification that has happened with the cathedral:

*“Had the pleasure of meeting Notre Dame at a charity do once. It was surprisingly down to earth, and very funny”.*

In the wake of the sudden loss of heritage, consumers looked back at their interactions with the monument, just as individuals do when they are confronted with the loss of a dear other (Kübler-Ross & Kessler, 2005):

*“I was lucky enough to see Notre Dame in person while on tour last year. One of the most beautiful places I’ve ever seen. It’s deeply saddening to see it go up in flames...”*

While for the vast majority of consumers, the sharing of memories relates to memories of a visit, for some privileged people, the relationship may have been more intimate, like this film director who had the opportunity to film a scene in Notre-Dame:

*“It is said that music soothes... I had filmed Olivier Latry playing on the great organ of Notre-Dame, just before a night of recording. The cathedral was deserted and peaceful. A magical moment”.*

### 3.3.5. Recovery

Finally, the fifth major theme of the grieving process that our data has highlighted is recovery. On the one hand, some consumers are so hurt by the destruction of the monument that they have difficulty projecting themselves and therefore tend to remain in the negative:

*“Here's some fax about Notre Dame Cathedral and why it burning down is a worldwide tragedy: #1 attraction in France, double that of the Eiffel Tower, it's 3.5x older than the US and the stained glass is irreplaceable, no one in the world knows how to recreate it”.*

But on the other hand, a large majority of individuals try not to stay in depression and to turn the mourning process into something positive, even if the path can be difficult:

*“At Notre-Dame, I share the emotion, the sadness and even more the pain of the French people and the citizens of the world. But also the same will: yes, we will rebuild Notre-Dame. A powerful challenge”.*

The intense collective emotion felt by individuals at the loss of Notre Dame must thus give rise to a collective energy, symbolized in particular by the wave of donations received from all over the world which will allow the cathedral to be rebuilt.

*“The French people will rebuild it, will undoubtedly raise it up again. And we will be there, the whole world is and will be with France. The cathedral of Notre Dame will rise from its ashes”.*

For some individuals, if a recovery is possible, it is also due to the qualities of the monument which, through its history, has already shown that it is resilient and able to withstand severe crises:

*“I know many of you are crying for Notre-Dame de Paris, but remember she is resilient. Notre-Dame de Paris survived when Prussia bombed Paris with artillery. She survived Two World Wars. If you think one fire will destroy her, then you don't know Notre-Dame de Paris”.*

## 4. Discussion

This research makes three main contributions. First, we contribute to the literature on personification. While previous literature has applied personification to brands, we suggest that individuals also attribute life to heritage sites. In fact, our data shows that the fire at the Notre-Dame Cathedral not only created great collective emotion, but also led consumers to engage in a grieving process. However, if individuals engage in such a process, it is because they feel the loss of a heritage monument as the loss of a loved one. In our study, consumers thus treat Notre-Dame as an active ‘other’ (Fournier, 1998), i.e. as a real person. Interestingly, we show that while brand personification is often the result of marketers’ efforts who actively seek to imbuing the brand with human attributes related to physical appearance or personality (Cohen, 2014) through the creation of a mascot or the addition of human visuals on product packages (Puzakova & Aggarwal, 2018), it seems more natural with regard to heritage and is not a managerial construction. Because heritage is part of the collective identity of individuals

(Yu Park, 2010) and that this is something that must be preserved, safeguarded and transmitted (Smith, 2006), consumers naturally attribute life to heritage monuments. Moreover, while the literature on personification tends to suggest that humanness leads to positive feelings such as sympathy, happiness and comfort (Herak et al., 2020), our study reveals that seeing non-human entities as humans can also lead to negative feelings such as shock, sadness and anger when it comes to the destruction and loss of the considered entity.

Second, we contribute to the literature on consumers' relationships with heritage. Individuals therefore not only develop relationships with heritage sites in positive contexts but also in contexts of loss and destruction. Based on our personification perspective, we show that individuals experience the destruction of heritage as the loss of a human person. Furthermore, even if the literature has investigated consumers' experience of heritage in negative contexts (Biran et al., 2011; Tunbridge & Ashworth, 1996; Uzzell & Ballantyne, 1998), it did not investigate the relationships created by individuals in such situations. We therefore contribute to this literature by showing that negative situations such as the loss of a monument, even partial, can lead to a form of attachment in individuals who mourn its disappearance. Personifying heritage sites thus prompts consumers to reflexively experience them in a more emotional way (Delbaere et al., 2011). Previous research shows that the more people personify a non-human entity the more likely they feel that the entity reminds them of the group that they belong to (Kwok et al., 2018). By considering heritage objects as humans, individuals therefore make them closer to them and therefore come closer to the social group they represent.

Third, we contribute to the literature on organizational death, which is concerned about the extent to which employees mourn the loss of their company (Marks and Vansteenkiste, 2008). (Ashforth et al., 2008), we find that a similar pattern in the case of individual's response to the destruction of heritage. Our data thus reveal feelings of mourning process, which include shock and denial, anger and sadness, questioning about life, sharing memories and recovery. However, as suggested by Hall (2014), these five dimensions should not be considered as a sequential process, but rather as a set of interrelated feelings that can arise and combine differently depending on individuals and events. Interestingly, our data highlight some differences between organizational mourning and the heritage mourning. Results show that the grieving process is not all about negative feelings. Contrary to organizational mourning, heritage mourning opens the void to hope. Indeed, heritage can be rebuilt or restored, so as to extend its lifespan, which is not possible in the case of a business closure that has a final side (Bell & Taylor, 2011). Likewise, our data highlights a phase of questioning that the death of heritage generates unlike the death of a business. The disappearance of an organization can generate a phase of memories during which individuals essentially recalled insiders thought of the organization as well as their personal experiences based on their daily interactions (Crosina & Pratt, 2019). We show that when it comes to heritage, people go above and beyond. Not only do they remember their memory of the monument but in addition, because of what it represents, the loss of heritage leads them to question the place of the monument in their life and in their community (Goulding & Domic, 2009; Poria et al., 2003; Yu Park, 2010).

## **5. Conclusion**

In response to the fire at Notre Dame Cathedral in Paris in 2019, many people around the world were keen to express themselves via social media platforms. Our study shows that they mainly expressed strong emotions, which would have been similar if a dramatic event had affected someone in their personal social network. There is thus a clear mark of

anthropomorphism, whereby individuals symbolically appropriate a part of the heritage they love, and create a link in an extended social network with other people with similar reactions. Moreover, several conversational communities are created in this social network, depending on the type of reaction they show, and the opinion leaders they react to.

This study has several limitations that deserve further research. We have studied the immediate and spontaneous responses of individuals following the destruction of heritage but further research should track people's online reactions over time. For example, one can assume that the collective emotion following the destruction of heritage fades over time. Indeed, previous research on organizational death suggests that the loss involves individuals disengaging “their emotional bonds with the ‘deceased’ so that a new identity in which the deceased is absent can be built” (Zell, 2003, p. 88). To what extent does the destruction or alteration of the site change the individual's link with the site?

Second, this research studied the process of consumer mourning in the case of the Notre Dame cathedral fire. Future research could refine the understanding of this process by differentiating the reactions of individuals according to the type of heritage destruction: voluntary destruction (destruction due to war, for example) versus unintentional destruction (as was the case for Notre Dame) to observe if there are any differences in reactions. Third, we adopted a personification lens -according to which consumers attribute human life to non-human objects (Huang & Mitchell, 2014)- to study the heritage mourning process. More generally, it would be interesting to explore in more detail what is heritage personification: do all sites have the potential to be impersonated? What characteristics must the site have to be personified? Is it the materiality of the situation (like an accidental fire in our case) that induces the personification?

The limits of such a study are also partly due to the constraints of collecting messages sent online. The Twitter API limits the number of messages we may collect. Moreover, the users of this social media are not representative of a specific population. We see further research worthy of consideration as a follow-up to this study: expanding the study to other social media, other events, and other time periods. In particular, we plan to compare the reactions collected immediately after the fire with those we collected one year later, on the anniversary of the fire.

In terms of managerial implications, several recommendations are possible. On the one hand, the actors of tourism industry should take into account the reactions of their potential targets, on the various online platforms available from now on. By collecting this information first hand, they will have at their disposal significant data on what can emotionally touch their audiences, and thus adapt their communication to maintain and improve the link they have with them.

On the other hand, public authorities must also interact with their populations, in order to establish a dialogue that is requested but currently lacking. Indeed, heritage deserves attention that is both public management and communication with various communities of interest. The purpose would be to create a form of loyalty to the object (in this case a monument), and more broadly to the territory, to the actors who bring it to life, to the activities that can be carried out to boost its attendance, and even to the difficult moments that a symbolic site can experience. The management of the emotional dimension of this communication is a field that still deserves in-depth work on the part of these various public and private actors.

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## Appendix 1

Number of participants	<b>21,216</b>
Unique Edges (connections between members)	22,878

Edges with Duplicates	2,207
Total number of edges	25,085
Self-Loops (messages without feedback)	6,394
<b>Reciprocated Vertex Pair Ratio</b>	0.002,699
Reciprocated Edge Ratio	0.005,385
Maximum Geodesic Distance (Diameter)	28 connections
Average Geodesic Distance	8.83 connections
Graph Density (% of possible links)	4.04,335 E-05
Network modularity	0.809,789

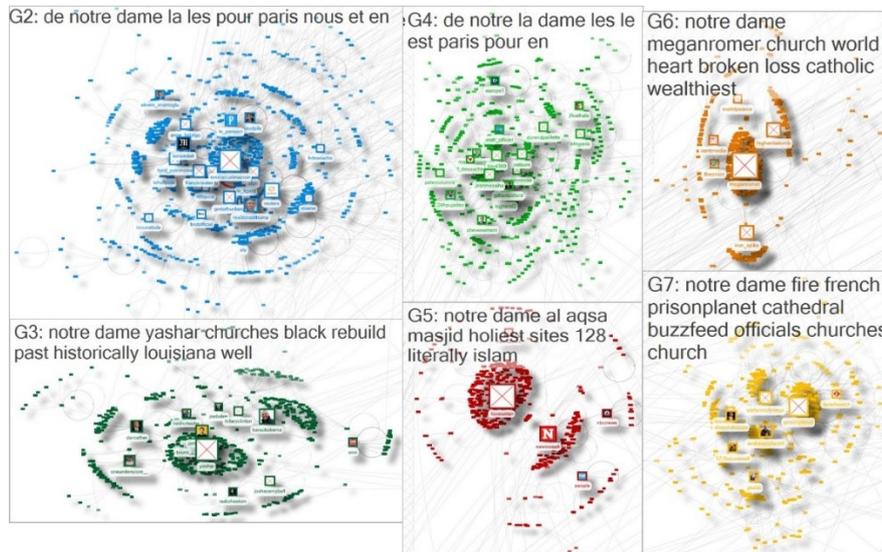
**Table 1: Overall Graph Metrics**

## Appendix 2

Ranking	Top 9 influencers	Betweenness Centrality	In-Degree	PageRank	Followers	Tweets
1	E. Macron	10,714,860.494	<b>198</b>	59,489	<b>3,851,020</b>	8,085
2	Kandake	9,710,244.588	<b>271</b>	<b>118,547</b>	559	1,163
3	Time Magazine	9,660,660.736	20	7,611	<b>15,913,829</b>	<b>315,395</b>
4	Megan Romer	9,322,589.113	<b>240</b>	<b>104,678</b>	7,681	<b>161,636</b>
5	Tenebrísimo	8,811,959.942	106	46,657	2,418	959
6	Ollivier Pourriol	8,800,519.790	149	63,368	7,473	2,726
7	El Barroquista	8,627,270.773	168	76,898	16,388	23,949
8	Miguel del Pino	8,395,219.267	0	0,863	312	15,840
9	Yashar Ali	8,053,988.478	<b>221</b>	<b>85,304</b>	<b>394,188</b>	<b>116,211</b>

**Table 2: Top 9 influencers, ranked by Betweenness Centrality**

## Appendix 3



**Mapping of Clusters 2 to 7**