Notre-Dame is on fire! Understanding the public's online reaction to the destruction of a world heritage site[1]

Damien CHANEY*, Pascal BRASSIER**

** Enseignant-Chercheur, EM Normandie, Métis Lab, France, dchaney@em-normandie.fr*

***Maître de Conférences, IAE Clermont Auvergne, CleRMa, France, pascal.brassier@uca.fr*

Résumé :

Des recherches ont montré que les individus peuvent nouer des liens profonds avec les sites du patrimoine, notamment en participant activement à des communautés en ligne. Mais que se passe-t-il lorsque le patrimoine est détruit ? En s'inspirant de la littérature sur la personnification des marques, nous étudions les réactions en ligne des consommateurs à la destruction du patrimoine. Grâce à une analyse des réseaux sociaux sur la plateforme Twitter sur l'incendie de la cathédrale Notre-Dame, nous montrons que la destruction du patrimoine est perçue par les visiteurs comme la perte d'une personne humaine proche. Nous proposons ainsi un processus de deuil du patrimoine composé de cinq composantes : choc et déni, colère et tristesse, questionnement sur la vie, partage des souvenirs et rétablissement. Enfin, des contributions théoriques et managériales sont proposées.

Mots clés : communautés en ligne, patrimoine, personnification de la marque, analyse des réseaux sociaux.

Abstract:

Research has found that individuals can foster deep bonds with heritage sites, including through active participation in online communities. But what happens when the heritage is destructed? Drawing on the literature on brand personification, we study online consumers' reaction to the destruction of heritage. Through a social network analysis on Twitter on the Notre-Dame cathedral fire, we show that the destruction or disappearance of heritage is perceived by visitors as the loss of a close human person. We thus propose a heritage mourning process composed of five components: shock and denial, anger and sadness, questioning about life, sharing memories and recovery. Finally, theoretical and managerial contributions are offered for.

Keywords: online communities, heritage, brand personification, social network analysis

---

[1] *Cette étude est dérivée du projet de recherche sur les communautés en ligne STAM – Services and Tools for Advanced Metrology – cofinancé par l'Union Européenne dans le cadre du Fonds Européen de Développement Régional (FEDER).*

Notre-Dame is on fire! Understanding the public's online reaction to the destruction of a world heritage site.

1. Introduction

Among the abundant literature on heritage, two main approaches can be identified. The first one deals with heritage management and has investigated topics such funding, collaboration with stakeholders (Aas et al., 2005), technology management (Bec et al., 2019) or the interactions with residents. The second approach relates to heritage experience and has looked at the pre-experience, the experience itself as well as the post-experience phases by studying for instance the motivations of consumers, the experience of nostalgia (Lee, 2015) and authenticity as well as consumers' loyalty (Yi et al., 2018).While the first approach is more product-centric, the second one is more consumer-centric.

We build on the literature on anthropomorphism and brand personification which claims that consumers have a tendency to attribute human life to brands (Huang and Mitchell, 2014). In this research, we extend this perspective and argue that consumers personify certain heritage places and therefore view them as living things. Applied to the case of destruction of heritage, this implies that such loss is experienced by individuals as the loss of a close person, or even a loved one, which leads consumers to engage in mourning processes (Crosina and Pratt, 2019). However, such processes remain understudied when it comes to heritage. To address this gap, we investigate the case of Notre-Dame Cathedral, the most visited site in France with 36,000 visitors each day[2], which was the subject of a highly publicized fire in 2019. We want to study particularly the online reactions of individuals, because of the very large extension of the digital social world experienced by most people, which lends itself well to the case of an internationally followed event. Through a social network analysis, our findings emphasize the strong collective emotion generated by the fire and reveal a heritage mourning process composed of five components: shock and denial, anger and sadness, questioning about life, sharing memories and recovery. Our study thus contributes (1) to the literature on personification by extending it to heritage, (2) to the literature on consumers' relationships

[2] https://www.globe-trotting.com/post/les-lieux-et-monuments-les-plus-visites-en-france

with heritage by studying heritage destruction and (3) to the literature on organizational death by proposing a heritage mourning process.

2. Theoretical background

2.1. An anthropomorphism perspective: From brand personification to heritage personification

Based on Guthrie's (1995) view of animism, brand personification refers to consumers' tendency to attribute human life to brand (Huang and Mitchell, 2014). Humanity's personification inclination is increasing in intensity, mainly because of humankind's innate need to personify (Guthrie, 1995). 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. This stream of research has thus investigated notions like motivations, similarity and need for belongingness. 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, especially those for whom they have the most feelings. Consumers personify a brand so that they can be treated as an active 'other'. While the notion of personification has been mainly applied to commercial brands, 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. Previous research has shown that the relationships individuals create with heritage have 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 and Chen, 2010) and that such sites have an identity impact on them which leads people to redefine themselves. 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. 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, attachment and passion (Edson, 2004), the question of how consumers react when heritage sites disappear because of destruction remains unknown.

2.2. Loss of heritage and online consumers' mourning processes

As explained by DeSilvey and Harrison (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 Harrison, 2020), the loss of heritage may have detrimental consequences not only for heritage managers, but also for individuals. Because individuals develop strong relationships with their heritage, we argue that the disappearance of heritage sites is believed to have significant consequences. Based on our personification perspective, we argue that individuals attribute life to heritage sites and, as a consequence, that they deal with the destruction of heritage as the loss of a close person, thus developing mourning processes. The social scientific study of death and loss is a quite nascent stream of research that has been significantly inspired by Freud's (1957) vision of mourning as a process thought which the emotional attachment to the deceased is stopped so that the ego can become autonomous again and invest in new attachments. For Freud, the idea for the mourner is to arrive at the objective conclusion that the object of the attachment no longer exists. Building on these initial ideas, Bowlby's (1980) theory of attachment suggests that mourning is based on four main stages: numbness; yearning, searching and anger; disorganization and despair; and reorganization. Similarly, studying terminally ill patients' responses to their impending death, Kübler-Ross (1969) has proposed a five stage model of grief: (1) denial, a conscious or unconscious rejection to facts, information, and the reality related with the situation at hand, (2) anger in which the mourner experiences negative emotions such as resentment and frustration, (3) bargaining during which the mourner tries to strategize on how to adapt to the

situation, (4), depression, the stage during which the individual experiences intense states of sadness and, (5) acceptance which refers to acknowledgement of the reality.

In this context, we are particularly interested in online reactions because of the importance of social media in consumption and emotional expression (Aichner et al, 2021). The social world of everyone has expanded enormously with the help of social networking platforms (Gruzd et al, 2011). This allows any individual to express himself on an event, wherever he is located, which he could not do easily before. We have thus observed a very important flow of messages, on all the networks, on the occasion of this event. It allowed thousands of people to share similar emotions with strangers feeling the same way, in several languages, thanks to the automated translation tools of the online platforms.

3. Method

3.1. Data collection

The fire at Notre Dame Cathedral in Paris on April 15, 2019, has generated an impressive amount of reaction around the world. 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. Twitter is often used in research to understand the emotional dimensions of online conversations. Research in various areas (Bruns and Stieglitz, 2013; Sinnenberg et al, 2017; Waterloo et al, 2018) has already shown that behaviors can differ from one social media to another, with behavioral codes being tacitly implanted. Knowing that, we have chosen Twitter as it is one of the most "conversational" networks: the actors involved identify themselves quickly and continue the conversations they have started over time. 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[3]. 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).

3.2. Data analysis

[3] https://nodexlgraphgallery.org/Pages/Graph.aspx?graphID=193957

A social network analysis (SNA) was conducted. This procedure identifies the social world of actors, its relational structure, and the forms of interindividual and group relationships (Burt et al, 2013). We measured the effects of a particular hashtag (#*notredame*) or keyword (*Notredame*), the way the conversation begins and grows, and controversies within it, separating conversational communities. The measures indicate the influences that certain individuals have due to their position, personal network, and/or action in the network (Burt et al, 2013; Hansen et al, 2020). In a second step, we conducted a sentiment analysis to understand the emotions expressed by actors in their online conversations. To do so, we assigned an emotional weight to the messages using a classification between positive and negative feelings, taken from a library developed by the University of Illinois in the field of natural language processing on sentence segments (Liu et al, 2005). In a third step, we analyzed the conversations and performed a content analysis on the tweets to identify the main topics of the conversations.

4. Findings

4.1. Analysis of the social network

Overall, our data is based on a network that consists of 21,216 Twitter users, 6,394 tweets (2h5.5% of the links), 752 replies (11.76% of the tweets, 3% of the links) and 17,939 mentions (71.5% of the links, M = 2.81/tweet). This represents a large network of users and messages on a single event. Their tweets contain the keyword or hashtag "Notre Dame", or they have received an answer or been mentioned in tweets, included in a data set limited by Twitter API.

Indicators from the network analysis show that a large number of people participate in a global conversation and react to emotions expressed by other individuals with whom they do not, a priori, have strong or regular ties. Multiple exchanges constitute the main form of relationship in this network, rather than dyads, based on the low ratios of the reciprocity indicators (reciprocated pair ratio = 0.0027, reciprocated edge ratio = 0.0054). The length of the shortest path between two members, which represents the social distance in the whole network, shows that community members are not particularly close, and few discuss with others directly (geodesic distance: M = 8.83, max = 28).

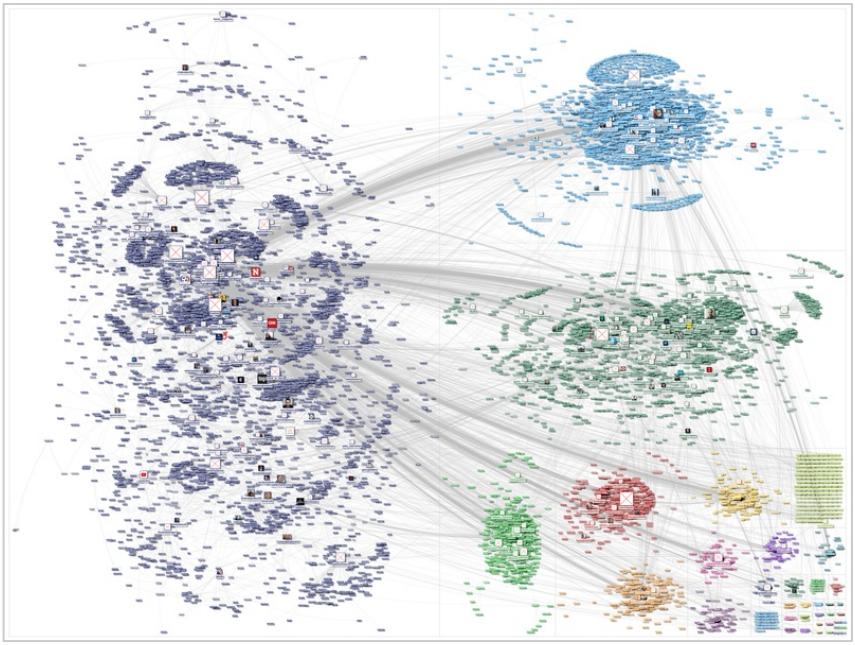

Figure 1. Graph of the #NotreDame Twitter community.

People essentially contribute to the expression of the collective emotion, without being strongly linked to each other, as the situation seems to impose itself on them and provoke their reaction.

4.2. 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 positive, negative or angry/violent lists.

Words	Count	Salience	% sentiment words
Positive List	**7,436**	0.015	**42.11**
Negative List	**9,775**	0.019	**55.35**
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 1. 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. Negative

words dominate: negativeness and anger represent 57.89%. 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.

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[4]. 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. 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 and Maclaran, 2007), its loss causes a scar that raises many questions. 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. 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.

5. Conclusion

[4] Due to size limit, we do not show here verbatim, which will be displayed during the conference.

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. 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 or disappearance of heritage as the loss of a human person. 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). 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 that 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. More globally, importance for managers to imbue heritage sites with humanlike features because it creates strong attachment from individuals. Marketers may anthropomorphized their brand through the creation of a mascot, the addition of human visuals on product packages or by giving brand names that signal social roles and familial relationships.

References

Aaker JL (1997) Dimensions of brand personality. *Journal of Marketing Research* 34(3): 347–356.

Aas C, Ladkin A and Fletcher J (2005) Stakeholder collaboration and heritage management. *Annals of Tourism Research* 32(1): 28–48.

Aggarwal P (2004) The effects of brand relationship norms on consumer attitudes and behavior. *Journal of Consumer Research* 31(1): 87–101.

Aichner T, Grünfelder M, Maurer O and Jegeni D (2021) Twenty-Five Years of Social Media: A Review of Social Media Applications and Definitions from 1994 to 2019. *Cyberpsychology, Behavior, and Social Networking* 24(4): 215-222.

Ashley S (2005) State Authority and the Public Sphere: Ideas on the changing role of the Museum as a Canadian social institution. *Museum and Society* 3(1) 5–17.

Bec A, Moyle B, Timms K, Schaffer V, Skavronskaya L and Little C (2019) Management of immersive heritage tourism experiences: A conceptual model. *Tourism Management* 72 117–120.

Bowlby EJM (1998) *Loss-Sadness and Depression: Attachment and Loss*. Volume 3. Basic Books Classics.

Bruns A and Stieglitz S (2013). Towards more systematic Twitter analysis: Metrics for tweeting activities. *International Journal of Social Research Methodology* 16(2): 91–108.

Burt RS, Kilduff M and Tasselli S (2013) Social network analysis: Foundations and frontiers on advantage Annual. *Review of Psychology* 64: 527-547.

Chen CF and Chen FS (2010) Experience quality perceived value satisfaction and behavioral intentions for heritage tourists. *Tourism Management* 31(1): 29–35.

Crosina E and Pratt MG (2019) Toward a model of organizational mourning: The case of former Lehman Brothers bankers. *Academy of Management Journal* 62(1): 66–98.

DeSilvey C and Harrison R (2020) Anticipating loss: rethinking endangerment in heritage futures. *International Journal of Heritage Studies 26*(1): 1–7.

Edson G (2004) Heritage: Pride or passion product or service? *International Journal of Heritage Studies* 10(4): 333–348.

Freud S (1957) Mourning and melancholia, In: Strachey J (Ed) *The standard edition of the complete psychological works of Sigmund Freud*. London: Hogarth Press, pp. 237–258.

Gruzd A, Wellman B and Takhteyev Y (2011). Imagining twitter as an imagined community. *American Behavioral Scientist*, 55(10): 1294–1318.

Guthrie SE (1995) *Faces in the clouds: A new theory of religion*. Oxford University Press.

Hall C (2014) Bereavement theory: Recent developments in our understanding of grief and bereavement. *Bereavement Care 33*(1): 7–12.

Hansen DL, Schneiderman B and Smith MA (2020) *Analyzing social media networks with NodeXL: Insights from a connected world*. Cambridge: Morgan Kaufmann.

Huang HH and Mitchell V (2014) The role of imagination and brand personification in brand relationships. *Psychology and Marketing 31*(1): 38–47.

Kübler-Ross E (1969) *On death and dying.* London: Tavistock.

Lee YJ (2015) Creating memorable experiences in a reuse heritage site. *Annals of Tourism Research* 55: 155–170.

Liu B, Hu M and Cheng J (2005) Opinion observer: Analyzing and comparing opinions on the Web. In: *14th WWW'05 Conference* (ed A Ellis and T Hagino), Chiba, Japan, 10-14 May 2005, pp 342-351. New-York: Association for Computing Machinery.

Sinnenberg L, Buttenheim AM, Padrez K, Mancheno C, Ungar L and Merchant RM (2017). Twitter as a tool for health research: A systematic review. *American Journal of Public Health* 107(1): 01–08.

Waterloo SF, Baumgartner SE, Peter J and Valkenburg PM (2018). Norms of online expressions of emotion: Comparing Facebook, Twitter, Instagram, and WhatsApp. *New Media and Society* 20(5): 1813–1831.

Yi X, Fu X, Yu L and Jiang L (2018) Authenticity and loyalty at heritage sites: The moderation effect of postmodern authenticity. *Tourism Management* 67: 411–424.

Yu Park H (2010) Heritage tourism: Emotional journeys into nationhood. *Annals of Tourism Research* 37(1): 116–135.