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Abstract

When making cultural heritage sites available for tourism, the use of partial or complete replicas can enable the public to see a heritage object/site that must remain closed to ensure its preservation, or due to its difficult access. What happens when the challenges of conservation, prohibiting any form of *in situ* access to an archaeological site, coupled with the challenges of presenting it to the public, are addressed through the creation of a replica that is presented as entirely faithful and which becomes the place where the visitor can experience “heritage”? Drawing from ten years of research, we explore the links between the Chauvet-Pont d’Arc Cave and its replica, the Pont d’Arc Cavern, both located in the southern Ardèche region of France. After discussing the role of authenticity and experience in the heritage process, an analysis of the characteristics of the Pont d’Arc Cavern highlights the emphasis placed on the emotional realm. We then discuss the possibilities for transferring the heritage values of the original cave to the replica based on how the replica is received by the visitors. Finally, this article addresses issues currently raised by the use of virtual reality in the field of cultural heritage (Dewi 2017), and participates in a fundamental consideration of the nature and use of Heritage (Smith 2006; Meskell 2012).

Introduction

Since the 1990s, the development of digital technologies and 3D models has contributed to reconciling the conflicting challenges of heritage conservation and cultural heritage tourism (Pieraccini et al. 2001). In the specific case of rock art sites, there is now a broad spectrum of virtual, augmented and tangible presentation methods available to stand in place of the original site and with many possible digital and material presentation combinations for any given site (Pinçon and Geneste 2010; Kaminski 2014; Jaillet et al. 2017) (e.g., Lascaux Cave). Digital heritage presentations often take the form of replicated models of sites that can be experienced online, such as the multimedia catalog of twenty-five “Major Archaeological Sites” published by the French Ministry of Culture¹. By combining sensory experiences and digital reality, hybrid devices can also enrich *in situ* visits through the use of augmented reality, consisting of new interactive interpretive techniques, which in turn lead to new forms of cultural engagement by the public (López-Menchero Bendicho et al. 2017, 43; Mazel 2017).

Created from the data captured by digital recordings, 3-D replicas can also take physical form. In the case of traveling exhibitions, such as Lascaux III (Weissberg 1998), or museums presenting replicas of sections of cave walls (e.g., Parc de la Préhistoire, Tarascon-sur-Ariège with a reproduction of the Salon Noir of Niaux Cave, cf. Clottes 2008, 15), the reproductions are typically partial and arranged to be visited in a museum context. The backside of the display is often visible, and the visitor thus knows and feels that they are visiting a replica. The principle is different in the case of full physical copies that are intended

to recreate the sensation of being in the original cave, such as the Chauvet-Pont d'Arc, Lascaux and Altamira caves in France and Spain. For these decorated caves, the combined challenges of conservation and regional development has led to the fabrication of replicas that bridge the domains of archaeology and tourism (Duval et al. 2017). They allow visitors to experience the simulated materiality of rock art sites that are closed to the public (Malgat et al. 2015). In this case, millimeter accurate perfection is sought in the fabrication of the replicas and the aim is to reproduce the images exactly and transmit the emotions of the original cave in a manner that permits the visitors to feel a connection with the authors of the paintings. This raises an interesting question: to what extent do the characteristics and scenography of the replica lead visitors to experience the features that define the original object or place as heritage? In other words, to what extent does the replica, because of what it enables the visitor to experience, assume the function, or even status, of heritage?

This brings into question conceptions of the “real” versus the “fake” and the hyperreal (Baudrillard 1981; Eco 1985) and more broadly, the nature and the use of heritage (Smith 2006; Meskell 2012). Here we are concerned with the criteria used to define an object/place as heritage, and the roles of authenticity and enjoyment in the construction of a heritage experience. The interconnections between these concepts will be debated in the first part of this paper, followed by a focus on the southern Ardèche region and the case study of the “Chauvet-Pont d'Arc Cave/Pont d'Arc Cavern duo”. After presenting the story of the construction of the Pont d'Arc Cavern replica, an analysis of its characteristics will highlight the emphasis placed on the emotional realm, seen here as a way for the visitor to have the experience of visiting the real cave. In a continuation of previous research (Malgat et al. 2015; Duval et al. 2017²), the third part will discuss the possibilities for extending the “heritagity” (Adell 2013) between the original cave and the replica based on how the public perceives the replica. Finally, we extend beyond the realm of decorated caves, to explore the consequences for cultural heritage sites; we ask what is at stake in these processes, and what are the consequences for heritage management.

1. Heritage, authenticity, experience and materiality : theoretical approach

The process of heritagization consists of attributing heritage values based on criteria that evolve through time and in conjunction with socio-cultural contexts (Smith 2006). Depending on the social groups and contexts, the criteria applied in the attribution of heritage significance can vary and combine several factors: age, artistic merit, monumentality, condition, rarity, representativeness, cultural values, etc. Among the latter, analysis of the regulations, procedures and practices of heritage institutions underlines the significance of the criterion of authenticity in the definition of what is considered as heritage (Labadi 2010). Authenticity is usually an essential condition in the attribution of heritage significance to a given entity and is a requirement for classification onto the UNESCO World Heritage List.

The inherently fabricated nature of complete or partial replicas of objects or monuments causes many actors and institutions to argue that their lack of authenticity should prohibit their heritagization. Concerning decorated cave replicas, J. Davallon (2006, 122-123) stated that: “a reconstitution thus has neither the semiotic status, nor the symbolic strength of an index (of a sign that is itself a part of the thing it represents), it has only the interest of an icon, meaning of a sign that resembles that which it represents, which is a copy. This type of simulation, even if it is based on research and strives to be as faithful as possible, cannot function as heritage because it lacks the memorial dimension that we attribute to the authentic object³”. The situation is very different, however, for other replicas and reconstructions that

have functioned in heritagization. For example, the city center of Warsaw, ninety percent of which was reconstructed following its destruction during the Second World War, has been listed as a World Heritage Site since 1980 as an “exceptional example of the nearly total reconstruction of a sequence of history⁴...”. Therefore, the role of authenticity in the definition of heritage is not as evident as it might seem.

Far from objective (Khalaf 2016), authenticity is a highly contingent notion (Kaeser 2011, 26) based on a set of perceptions and emotions through which an object or site obtains a symbolic power extending beyond the simple criterion of antiquity. Restored monuments, archaeological objects in museum displays, and artworks are examples of this process. Though objects and artworks are presented as authentic, they have often been subject to complex chemical treatments that enable them to be presented to the public without damage through time (Kaeser 2011, 22). The perception of their authenticity is related more to a negotiation between the individuals and the context of the display rather than to the intrinsic material properties of the object displayed, or its antiquity (Jones 2009, 2010).

Does the use of copies lead to a loss of symbolic value? The answer to this question is unclear: while some authorized heritage and museum discourses still treat authenticity as something intrinsic to historic buildings, monuments and objects, based on their antiquity, others attribute an increasingly important role to the experiential component and base the attribution of authenticity on the experience associated with an object/monument/place, independently of the its intrinsic properties and antiquity, following the Nara document recommendations. On this point, some recent studies have shown that as physical replicas become the monuments that people visit, they develop their own aura of authenticity (Jones, 2009, 2010). Their capacities depend on their modes of production and consumption, and the networks of the institutional and individual relations in which they are embedded (e.g., Latour and Lowe 2011; Foster and Curtis 2016).

These thoughts on authenticity lead us to address the role played by the experiential component in the construction of heritagization. Following the ideas of Smith (2006), we support the position that the experiential component plays a central role in the heritage significance formation. Without an experiential component, heritagization is simply a process of heritage designation and it would not gain popular traction. One of the challenges for heritage and education actors is to design tools that will enable visitors to experience the values for which a place, monument or object is considered significant, beginning with the experience of authenticity. Recent heritage research challenging the notion of authenticity suggests that particular material properties of historical objects are important to how people experience and negotiate authenticity (Jones 2009, 2010, Jones and Yarrow 2013). In particular, aging, patina and material decay are significant elements in the experience of authenticity, creating a diffuse sense of “pastness” (Holtorf 2013). The feeling transmitted by patina participates in the construction of a relationship to time and is a significant element in the ideas and practices of archaeologists and heritage managers participating in the (re)constitution of archaeological places where the ambiance, created through material devices, is designed to make the visitors experience the depths of time (Stone and Planel 1999).

When applied to the domain of rock art, the challenge is to consider the extent to which a visit to a decorated cave replica succeeds in enabling visitors to experience the heritage values of the original Palaeolithic art. Otherwise formulated by N. James (2016, 519), “Can Palaeolithic pictures—or an ancient farm or urban quarter—be reproduced to let visitors recognize, understand or experience something of the ancient way of life and thought?” And at the same time, to what extent does the quality of this experience lead to an extension of this “heritagity” from the original to the copy? These questions are especially relevant given that the original caves are closed to the public. The visitors to replicas therefore lack a frame of

reference by which to compare a replica visit to a real cave visit. What the public seeks, in principle, when visiting a replica is an emotion similar to that which they think they would feel when visiting a real cave.

2. Commissioning a replica

Overview of the Pont d'Arc Cavern

The Chauvet-Pont d'Arc Cave and its replica, the Pont d'Arc Cavern, both located near the Pont d'Arc and at the entrance to the Gorges de l'Ardèche (southeastern France), provide a relevant case study for an exploration of the extent to which a replica can enable visitors to experience the values for which an object or place is defined as heritage. Such an analysis is also informative about the possible extensions of heritage values and significance between replicas and original caves. Discovered in December 1994, the Chauvet-Pont d'Arc Cave, currently one of the oldest dated decorated caves in the world (36,000 BP; Valladas et al. 2001) was immediately the subject of valorization projects (tourism, education, outreach). It was listed as a UNESCO World Heritage Site (since June 2014) and a replica was commissioned (open since April 2015).

The “Cavern” opened in April 2015, two kilometres from the original Chauvet-Pont d'Arc Cave (Cachat et al. 2012). This site is composed of several buildings: a welcome center, boutique, restaurant, an event center with shows and other events concerning Prehistory, an educational area for young visitors, the replica itself and an interpretation center called the “Aurignacian Gallery” (*Syndicat Mixte de l'Espace de Restitution de la Grotte Chauvet, 2009* – called SMERGC in the rest of this article). While the function of the replica is to enable visitors to see and feel the ancient rock paintings by emphasizing the emotional component, the “interpretation center” completes the visit with a presentation of the Aurignacian culture, the palaeogeography, and the artistic techniques used to create the replica cave.

The replica is the highlight of the visit for most people, and it is generally here that the visit to the entire site begins⁵. In a group of 20 to 28 people, following a guide whose commentaries are heard through individual headsets, the visitor follows a path through the replica for 50 minutes. At the exit, he/she follows the oak-lined paths in the direction of the Interpretation Center. Once they have visited the interpretation center, and depending on the time of the visit, the visitors can also visit a Palaeolithic campsite and observe different fire-making techniques and objects from the daily lives of Aurignacians. It is also possible to eat at the site restaurant. The visit ends with an information center devoted to the richness of the Ardèche Department (with the aim of encouraging Cavern visitors to discover the other sites in the region), and a boutique featuring items related to prehistory, rock art and local crafts.

The challenges of the replica

During the fifteen years between the discovery of the cave and the start of the construction of the Cavern, in addition to the challenges related to the choice of a location (Cachat et al. 2012), its form and content were gradually refined (Malgat et al. 2012). The aim was to offer the public a site capable for transmitting the heritage values attributed to the Chauvet-Pont d'Arc Cave, while also satisfying the needs associated with regional development.

From the moment of its discovery, the closing of the cave was presented as imperative for preservation and very few people have expressed any doubt as to the validity of this claim (Amirou 2000, 100). However, the nature of a decorated cave per se does not necessarily imply the restriction of all forms of tourism (Geneste 1999; Kaminski 2014). In France alone,

the caves of Niaux (Ariège), Font-de-Gaume (Dordogne) and Pech Merle (Lot), to name a few, receive visitors according to procedures defined by the regional directorates of cultural affairs (Malgat et al. 2012). Until 2009, even Chauvet Cave accepted up to 500 visitors per year, following a procedure similar to that implemented since 2015 at Altamira Cave in Spain (Parga-Dans and Alonso González 2018). It would be nonetheless incorrect to consider Chauvet Cave as a tourist site: the visits corresponded more to an opportunity offered to the most motivated amateurs than to a touristic activity in the literal sense. In the case of Chauvet Cave, the preservation of the material qualities of the artworks and their archaeological context, justified the exclusion of any form of *in situ* visibility and accessibility. Furthermore, a opening of the original cave to tourism would never have permitted the realization of the touristic and economic potential of this discovery (Duval 2010).

The discovery of the Chauvet-Pont d'Arc Cave and the formalization of its outreach project were immediately seen as a boon for the diversification of tourism as it would enable an enlargement of the touristic economy to include the cultural realm, as had already been achieved with the Altamira Cave replica (Lasheras Corruchaga and Fatas Monforte 2006). In the semi-structured interviews that we conducted, Chauvet Cave and its replica were compared to a “beacon”, a “clarion call”, a “loud-speaker”, a “trigger”, and a “centerpiece” to propel new forms of tourism that could “making the Ardèche a place where we come not only to hike, canoe and eat a sandwich and fries, but also a place where the cultural attractivity is strong” (interview with Pascal Terrasse, Deputy, president of SMERGC, 22/03/2013).

Three years after its opening, the objectives of the replica seem to have been attained: 1.5 million visitors, including 470,000 in 2017⁶. While some of these visitors were tourists that were already present in the region, the Agency for Touristic Development in Ardèche estimates that since its opening, the Pont d'Arc Cavern has attracted 280,000 additional tourists, and has generated 80 million euros of revenue in the region. In the words of the director of the Office of Tourism of the Vallon-Pont-d'Arc, “The image of the Ardèche is in the process of evolving and we are becoming a heritage and cultural destination that counts” (interview realized during a television show “Un jour en Auvergne-Rhone-Alpes”, 22/03/2018).

Genesis and evolution of the replica project: the role of materiality

An analysis of the different versions of plans for the “Chauvet Cave Restitution Center,” so-named in 1996 (Dauphiné Libéré, 24-03-1996, CCRS in the rest of this article), shows the choices gradually made among the virtual and material options by the various participants in its design. It also substantiates the concepts discussed in the first part of this article concerning the role of physical materiality in the creation of an experience of authenticity.

The first version of the project emphasized new technologies and their capacity to transmit the wonders of Chauvet Cave to visitors. Led by the Ardèche Department, the first project, called “Exploration through Images,” was planned for 2011 and lay somewhere between a museum and “a replica of the cave” (Newspaper Dauphiné Libéré, 24/03/1996). Relying on “the use of virtual imagery techniques (realization of a 3D film)” (Newspaper Réveil du Vivarais, 29/03/1996) and it was composed of three main elements:

- a high-resolution panoramic theater in which a film reconstituting life in the Ardèche Valley during the Aurignacian period (30,000 BP) would be shown;
- a theater showing images of the cave in relief, and;
- a third space where the visitors would travel through the world of excavations, and the discovery and interpretation of archaeological treasures.

In 1999, faced with the difficulties associated with filming inside Chauvet Cave, the department changed its strategy and chose a new central theme, “a long voyage through time.” The first room, entitled “Traveling Back in Time,” would address the palaeoenvironment, the formation of the gorges, and the origins of humans and their arrival in the Ardèche area. The second space, called “Freeze Frame,” would offer “a visit to the cave via various techniques to recreate the emotion [...]. Finally, the third space, “Back to the Future” [would] present survey, research and interpretation techniques and their consequences, along with links to other sites in the Ardèche” (Newspaper La Tribune, 28/10/1999). The tender process failed as none of the candidates were deemed satisfactory. This phase was nonetheless decisive in the maturation of the project: it was decided that the future CCRS must recreate the emotion felt when visiting the original cave, and to do this, “the restitution must be visited (following a path) in an ambiance created in part by a facsimile and in part by virtual techniques” (Newspaper Dauphiné Libéré, 01/06/2000).

While virtual replication played a major role in the first designs the choice was gradually made to favor materiality, with the construction of buildings and devices that would enable the visitor to walk among the artworks physically reproduced on the walls in an underground ambiance. As Richard Buffat, director of the SMERGC, explained on February 12, 2013, “the CCRS will enable the public to see the invisible and to discover this universal human heritage. Playing a starring role, the CCRS will become the site, the one that can be seen. When I arrived, there was debate over whether it was a good thing to spend 40 million euros on an installation, wouldn't it be better to develop the heritage of Chauvet Cave through exhibitions, presentations, shows, virtual devices. Perhaps, and one does not exclude the other moreover, but I'm certain that a single, central monument will best communicate the treasures of the cave. This is not an easy task, creating a restitution site means doing it as well as the first artists of Humanity, to pay tribute to them, all the while ensuring that this equipment will be a driving force for regional development.”

3. Which replica?

A discourse in action

The creation of a replica forcibly represents a set of choices: the location where it is to be built (Cachat et al. 2012), the nature of the building, the types of materials and techniques that will be used and, above all, the choice of the rock art site that the actors wish to present, all in accordance with the imperatives of the Authorized Heritage Discourse (AHD) (Smith 2006). In all respects, a replica is a discourse in action. It is both a testimony and indicator of the production contexts, choices of the actors, and structuration of the AHD. In the particular context of rock art, the form given to a replica is a materialization of the point of view of what caves are today and why they are meaningful.

From the start, the Chauvet Cave replica was designed to transmit the values attributed to the cave at the time of its discovery, values which were expressed and formalized from the moment the discovery was announced in 1994. Even before any dates for the Chauvet-Pont d'Arc Cave had been obtained, it was attributed a high heritage value based on its artistic quality and scientific values. The discourse of the elected officials and heritage actors, amplified by articles published in national and international news media, emphasized its exceptional nature, calling it “One of the great masterpieces of prehistoric art” (Newspaper Humanité, 09/01/1995). All of these values were reaffirmed and extended with the listing of the cave as a World Heritage Site in June 2014 (Duval and Gauchon 2013).

Artistic, aesthetic, scientific, conservational and cultural values are attributed only to the contents of the cave. The environment in which the cave exists was not considered: the

landscape environment of the Combe d'Arc (geomorphological context with the entrance to the Ardèche and Pont d'Arc gorges) is excluded from the arguments, along with the cultural and archaeological context of all the Palaeolithic caves in the Ardèche Gorges. These choices of arguments and perimeter can be explained by the spatial considerations with which the main stakeholders had to work: this minimal perimeter appeared to them to be the most (or only?) compatible with the touristic activities in the zone (Duval and Gauchon 2013). This institutional definition of the values for which the original cave is considered as heritage explains the choices that guided the construction of the replica.

Choosing characteristics

Reproduce the entire Chauvet Cave (8000m²) would have required the procurement of a very large site within an environment limited by touristic pressures and natural heritage protection requirements. Added to this, the cost of building an exact life-sized accurate facsimile would have been prohibitive. The project leaders therefore decided that not all of the parietal, archaeological, palaeontological and geomorphological objects from Chauvet Cave would be represented. Eighty-two 'pieces' were therefore selected by the main project leader, the SMERGC, in association with the scenographers and researchers participating in the project (figure 1). These pieces were reproduced at full-scale and rearranged in the replica while respecting the order of the succession of the panels in the original cave. This procedure constitutes a contraction of the original cave, which the visitor discovers *via* a path with ten stations that present the fundamental elements of the original cave (figure 2).



Figure 1: Restitution procedure of the replica *via* the identification and rearrangement of 82 selected pieces (after SMERGC 2011, 32). © SMERGC/geom. Perazio.



Figure 2: the ten stations presenting the fundamental elements of the original cave in the replica (after Société d'exploitation de la Caverne du Pont d'Arc, 2017)

The restitution of Chauvet Cave thus borrows from the principles of a facsimile and of an anamorphosis. Facsimile in the sense that the selected parietal, archaeological and paleontological objects are represented at full scale with millimetric precision using a digital 3D recording and modern materials. Combining ancient and modern materials, the techniques and tools employed enabled the creation of a reproduction visually identical to the objects in the original cave. Anamorphosis in that the replica consists of a contraction of the 8,500 m² of the cave into the 3,000 m² of the restitution. The topography of the original cave is rearranged and modified through the use of a “mathematical procedure [that enables] a curving of the model by folding it into itself. It [is] therefore possible to represent the cave while preserving the appearance of the original volumes” (SMERGC 2009, 14).

With its combination of the characteristics of a facsimile (the scale of the panels and objects represented) and an anamorphosis (the scale of the cave), the Chauvet Cave replica permits the regional actors to present it as “a perfect reconstitution of the Chauvet-Pont d'Arc Cave” (SMERGC 2012, 5). This representation is further supported by the validation of the SMERGC replica project by the scientific community. In this win-win situation, the researchers obtain more recognition through their participation in the replica project, as well as a form of social prestige, while the SMERGC benefits from their scientific validation, permitting them to present the Chauvet Cave as “a faithful copy” (Delluc and Delluc 1984, concerning Lascaux 2) or as “a well-copied original” (Latour and Lowe 2011, 278).

An immersive scenographic experience

Experience and emotion were at the heart of this restitution project. Echoing current trends in museology that emphasize the development of multisensory experiences and aim to encourage visitors to use a range of senses to explore a place (or an exhibition) and to generate a memorable experience (Levent and Pascual-Leone 2014), the conditioning of visitors to the Pont d'Arc Cavern *via* multiple sensorial devices is meant to function as a substitute for antiquity. The goal is to plunge them “deep into immemorial time (...) within this very particular universe that seems to be still inhabited by the presence of humans and

bears” (SMERGC 2012, 9), and to make them feel “the same emotion that is experienced when standing in front of the masterpieces of our Aurignacian ancestors (...), and to deeply touch the soul and intimacy of each person” (SMERGC 2014, 2-3). The leaders of the project also gambled that this emotion would lead the visitors to a feeling of communication with the ancestors. The scenographer oriented her project in this manner, “beyond a scientific restitution, the interest of the project was to transmit the spirit of the cave, the emotions felt by the researchers at the moment of its discovery. In two years, I went into the cave at least forty times. I observed a lot and I tried to identify the main features in each zone to try to recreate their spirit” (interview with Mélanie Claude, 04/05/2015, France TV Info⁷).

The challenge is to infuse the replica with a symbolic power similar to that of the original cave so that the visitors will feel the same emotion as one feels when visiting the real cave. To encourage “the appreciation of the aura” (Latour and Lowe 2011, 282-83), several devices have been used. First, particular care was taken in the reconstruction of the endo-karstic environment (walls, floor, ceiling, concretions): “When the visitors enter, we wanted them feel as if they were in a real cave, not just a décor. I wanted to reproduce the minute details of the cave” (interview with Mélanie Claude, 04/05/2015, France TV Info). New techniques of casting, using resins and colorants, and for creating the effects of moisture on the walls, brilliance of the floors and the transparency of draperies were developed to reconstruct a form of authenticity. The goal was to create a cave that would make the visitors feel the depths of time, the patina of age and use (Holtorf 2013). In this manner, this (re)construction of the endo-karstic environment aims to transmit both the antiquity of the cave and the freshness of the environment in which the parietal artworks exist.

Once the decor had been created, other scenographic elements were employed to create emotion through the implication of different senses. As underlined by Jones, “Whilst the experience of authenticity is linked to the materiality of heritage objects, it is not something that is restricted, in an intrinsic manner, to the object as a discrete thing” (Jones 2009, 141). The implication is that practices of conservation and display need to be sensitive to these networks of relationships and maintain them where possible (Jones 2009).

The objective here is to create the atmosphere of a cave, the “spirit of the place”, to lead the visitors into an experience of authenticity: “Designed from a naturalist perspective, the facsimile faithfully embodies the complex and tormented volumes of the cave, emphasizing its monumental nature, beauty, and the remarkable freshness. To arouse the emotion provoked by this immersion into the heart of immemorial time, the five senses are stimulated. Cool air, humidity, silence, obscurity and olfactive senses all contribute “to immersing the visitors in this very unusual universe, which seems to be inhabited still today by the presence of humans and bears” (SMERGC 2012, 9). Through an immersive scenography playing with humidity and temperature, as well as odor with the restitution of the smells of clay and wet rocks, the challenge is to guarantee an “authentic touristic experience” that will permit the visitors “to see and live the original” (interview with Pascal Terrasse, Deputy, President of SMERGC, le 22/03/2013).

Though we are far from the conditions of visiting the original cave, humidity, temperature, odors and light are used to meet the challenge of believability, rather than to faithfully reproduce the original: for example, the initial humidity level of 75% was lowered to ensure visitor comfort. Concerning the temperature, it was initially set at 16° all year long, but adjustments were it now varies relative to the outside temperature, far from the 13° inside the original cave. Regarding the light, the effect of very dim light is produced by diffuse lighting systems that illuminate the panels only for the amount of time that a group stops at that station. This dimly lit ambiance depends greatly on the number of groups present at the same time in the replica (up to 10) and the degree of co-visibility of the stations relative to each other. The lighting of the replica is very different from that which must have existed in

the original cave when the paintings were created, before the collapse of the cave entrance. The cave would have received natural light at the entrance, and only the flickering light of torches and grease-lamps would have illuminated the depths of the cave⁸.

Finally, the hushed atmosphere of the underground world is created by the use of audio headsets distributed at the start of the visit⁹. This enables: 1) the guide to speak quietly and more easily contain the group (better working conditions); 2) the visitors to hear the commentaries better while being isolated from other possible noises (visit quality); 3) the visitors to “experience the intimacy of the cave” (interview with Valérie Molès, Head of cultural, educational and scientific activities at the Pont d’Arc Cavern, 6 May 2016) by encouraging “a semi-spiritual relationship with the object of the gaze” (James 2016, 523 ; dimension experiential), and; 4) the manager to control the visit duration and the number of groups per hour (economic returns).

This feeling that one is visiting a real (believability) cave is enhanced by the choice of the site location in the karstic plateau, and the semi-buried construction of the building. Though the replica is contained in a very contemporary looking building, the visitor descends a ramp that creates the impression of entering an underground space and then enters into the first chamber. Here, the groups are directed toward a second chamber where they are provided with audio headsets. They then advance to a dimly lit third chamber where they listen to the first commentaries of their guide before the door to the replica opens in a theatrical manner (an automatic sliding door that opens like a theater curtain), inciting astonished reactions. “Wow, it’s beautiful!” is always heard from one or several visitors as the door opens.

The visitors then move along a system of paths and platforms, which evokes a temporal gap between the present and the cave of 36,000 years ago: from high up on their pathway, the visitor is a 21st-century human contemplating the artworks created by the Aurignacians. This temporal gap is reinforced with a processes of sacralization by the instructions given to the visitors in the second chamber : not to take photos or videos, even without flash, and not to touch the concretions or paintings. This communicates the same preservation values as apply to the original cave. According to the current managers of the site, “the rule of not taking photos or films is mainly aimed at preserving the ‘cave’ atmosphere. Normally, camera flashes have no effects on the preservation of the casts” (interview Valérie Molès, Head of cultural, educational and scientific activities at the Pont d’Arc Cavern, 06/05/16). In practice, this nuance is not brought to the attention of visitors, or even contradictory information is brought to them: “One last thing before beginning my explanations, in the Cavern we do not touch the walls, I’m very serious, we do not touch the artworks. This goes for adults and children; we touch only with our eyes” (visit of 2 August 2016, 14h25). The public thus visits the replica as if it were the original cave, which is one way of preparing them to experience the aura.

The role of the guides

During the summers of 2016 and 2017, we joined visits with some tourist groups (14 visits with French groups; 8 with English groups). Within the visits done with French groups, two of them were made with the pre-recorded English audio-guide. All others (12 visits in French and 8 in English) were made with the live commentaries of the guide¹⁰. In accord with the Cavern direction, the visits accompanied by live guides were recorded and anonymized (20 visits in total). The transcription of the commentaries reveals variations in their discourse, such as in the manner of explaining some panels¹¹. It also shows similarities, such as the manner of addressing the fact of visiting a false “real cave.” While the fact of visiting a replica is addressed in the last chamber before entering the replica, it is never mentioned once inside, and the guides describe the panels and karstic environment as if they were the

originals. The objective is clearly to “do what is necessary to make the magic happen (...). At the beginning of the visit, before entering into the replica, I advise the guides to tell the visitors that they are about to enter into a replica, in order not to lie to them, but after, I also advise them not to address this question again so that the charm can operate” (interview with Valérie Molès, Head of cultural, educational and scientific activities of the Pont d’Arc Cavern, 06/05/2016).

Let’s consider the discourse of the guide on the visit of a French group on August 6, 2016, at 4:00, which is representative of most visits: “While your eyes adjust to the darkness in this small corridor, I’m going to take you a bit back in time. It’s December 18, 1994, and three spelunkers named Eliette Brunel, Christian Hillare and Jean-Marie Chauvet are doing some private speleological research at the Pont d’Arc. And at the Pont d’Arc, they discover a small hole in the cliff face. It’s a small hole in the wall, and when we put our hand close to it, we can feel cool air coming out, and we know that there’s a cave inside. It was Jean-Marie Chauvet who insisted that they go in to see what was behind the hole and that’s why the cave is now called the Chauvet Cave. They decided to make the hole big enough for Eliette, who was the smallest of the three, to pass through it. After crawling for ten meters through a tunnel, she arrived at the top of a chamber where she installed a ladder. And when all three of them realized the magnitude of what they had discovered, they called a parietal art expert, Jean Clottes, who was on Christmas vacation. But when he heard what they had found in the cave, he took the first train out to meet them. And when he visited the cave, he wept before the beauty of the paintings. The first decision made when he exited the cave was to close it to the public so that the errors made at Lascaux would not be made here. And speaking of Lascaux, there is as much time between Lascaux and us, 17,000 years, as there is between Lascaux and Chauvet, because here we will travel 36,000 years into the past. We’re going to make a huge leap back in time to the Ice Age when Aurignacian people lived. In the first part of the cave, there are only drawings and paintings in iron oxide, and at a certain point in the cave, the artists began to draw with charcoal. On the first panel, you’ll see that the drawings are barely visible, but from panel to panel, the lines become more precise, until we arrive at the end of the cave and the last incredible panel, so incredible that UNESCO decided in 2014 to classify this cave as the first masterpiece of humanity. What we’ll see on the last panel is very far from just a little drawing of a bison on a wall. I hope that everyone understands that this visit might completely change your perception of who the Homo sapiens were and I’m going to do my best to make that happen. Welcome to the cave”; and the sliding door opens.

Inside, the illusion becomes a reality with a precise description of the spatial and temporal framework into which the visitors will be immersed: that of the discoverers as they explore the Chauvet Cave. The effects of reality are sought and the use of the pronoun maintaining the illusion that the visitors are walking in the shoes of the discoverers observing the works created by the Aurignacians.

Station 1, entrance and calcite concretion: “Here we’re in the first chamber into which the spelunkers arrived, through the small tunnel above us. This first chamber is called the Brunel Chamber, which was named after the first person who entered the cave. The landscape of Chauvet Cave is magnificent, with remarkable volumes and concretions that you can discover here. The first thing that Eliette saw was these matt and dull concretions, which date to the period of the formation of the cave, five million years ago. She then turned her head and saw this column. This happens when a stalagmite and stalactite meet each other. In a cave, some parts are older than others. As you can see here, there are more sparkly parts, which means that the calcite was more recently deposited. And it’s orange when there is iron oxide. Otherwise, when it’s white, it’s calcite, which is calcium carbonate. Here we have a curtain of

“straw” stalactites; each time you see white and sparkly concretions, they are very young. To the right, you see a much less brilliant massif, where the calcite stopped being deposited a very long time ago, and it’s thanks to this that we can see the upper body of this mammoth.” (French visit on August 6, 2016, 4:00).

Station 5, Rhinoceros Frieze: “Notice the perfect proportions of this woolly rhinoceros and look at how they already mastered all the techniques, such as shading, how they already rendered all the volumes of this animal so well that it is still easily identifiable tens of thousands of years later. And here, a small negative handprint, made with a stencil. They also mastered the art of stenciling...and starting here in the cave they put concretions on the floor, these blocks. Maybe this was to mark a transition in the cave, from the iron oxide part to the part we’re going to enter now, which is dark, more humid, and it’s starting now that they’ll make magnificent drawings with charcoal” (French visit on August 9, 2016, 9:40).

Station 6, Panel of the Engraved Owl: “Here there’s a lot of soft clay, kind of like soft butter, if you make a fingerprint, it stays there. And there are finger marks. And they made a fabulous little thing, and what a fabulous thing, the one and only representation in the world of an Eagle owl. There is no hesitation in the movements; the artist never redid their lines, and it took around 5 seconds to draw this owl with a few lines. Look at the beauty and steadiness of the movement, and the freshness of the lines! There are still some fingerprints. It looks like this was done five minutes ago, but it dates to at least 21,000 years ago, before the cave entrance collapsed” (French visit on August 4, 2016, 3:30).

Station 9, Panel of the Horses: “On the left, the Panel of the Horses with these four magnificent horses, here, what is remarkable is that each horse has a different expression and they even succeeded at rendering the breath of the horse by scraping with a flint tool. It’s remarkable when we think of the tools they had that they were such masters at drawing, it’s amazing (...). They already had the whole drawing in their head before they began to make it. And look how they managed to make each horse with a different expression, it’s so remarkable! (...) and notice the life-like nature of these head-to-head rhinoceroses on this wall for 36,000 years” (French visit on August 6, 2016, 10:20).

This attempt to create an experience of authenticity appears successful, as attested by remarks recorded at the end of the visits in which we took part. On August 8, 2018, at 10:25, a tourist asked if the reconstitution was made with the same techniques. The guide answered, “Yes, for the drawings, it’s indeed ochre and charcoal that you saw, made by contemporary artists. On the other hand, the walls are not limestone. The walls that you saw are made from a mesh that gives their volume, and then a mortar was projected onto them and painted, engraved and sculpted...”. The guide was then cut-off by another participant in the group, “no, don’t tell us that, stop, your ruining the magic!”. Some visitors go as far as to doubt the existence of the replica, “but in fact, is this the real cave that you covered with a modern monument?”, as if the karstic environment containing the original cave had been levelled off and a modern building was constructed on top of it (comment made by a French tourist after visit on August 12, 2017, 11:20).

The characteristics of the replica, scenographic choices and discourses of the guides work together to place the experiential dimension at the heart of the replica. Using hyper-reality mechanisms, the aim is to create an illusion of experience that resembles a *trompe-l’oeil* (Marin 1994, 303-312). In return, the scenographic effects reinforce the “authenticity” of the replica, which is experienced more through the relationship to the object than through the intrinsic characteristics of the latter (Brown 1999). This use of staging effects aims to

relegate the criteria of antiquity and authenticity to the background while focusing on the quality of the lived experience in order to draw the visitor into communication with time.

4. Reality and limits in the transfer of heritagity

Being the key element ensuring the transfer of heritagity between the original cave and the replica, the realm of experience raises questions as to the role of the visitors in this dynamic. To explore the operational dimensions of the devices used in the replica, we conducted an analysis of visitor behaviour during two field seasons, in August 2016 and August 2017. This investigation of the public led to an analysis of the degree to which the visitors experience the aura of the decorated cave, and which elements, from their point of view, contribute to the creation of an authentic experience. To what extent does the visit of the replica create, extend and reinforce networks of relations between people, places and things, and in so doing mediate the experience of authenticity (Jones 2010)? To what extent does the copy enable the visitor to experience the “depths of time” (Smith 2006), sense of place, and sense of time (Ashworth and Graham 2005)?

We conducted semi-structured interviews with a panel of 70 individuals (60 Francophones and 10 Anglophones¹²). Lasting 10 to 15 minutes, the interviews were realized immediately after the visit to the replica and consisted of alternating open and closed questions on the following topics: 1) motivations for coming to the Ardèche; 2) number of visits to the region; 3) activities undertaken; 4) interest in visiting the Pont d’Arc Cavern; 5) previous visits of decorated sites or replicas; 6) feelings when visiting the replica, and; 7) satisfaction relative to virtual replicas. Our objective was to obtain the most diverse range of responses possible without using a qualitative sampling procedure. We (MD, CM and LM) sought to diversify the visitor profiles according to three main categories: age, gender and group composition¹³. The interviews were recorded, anonymous and transcribed, thus enabling us to collect high-quality data concerning visitor perceptions for the purposes of analysis.

All the visitors interviewed came from outside the Gorges of Ardèche: 60% are women and 40% are men. The age range is balanced: 30-35 years, 13%, 35-40 years, 20%, 40-45 years, 17%, 45-50 years, 13 %, 50-55 years, 11%, 55-60 years and, 13%, 60-65 years, 13%. The surveys were conducted during the summer season and thus did not include interviews of many French seniors who typically travel in spring and fall.

Twenty-five percent of the visitors were excursionists (18 persons) and came specifically to the Ardèche for a one day to visit the Pont d’Arc Cavern. For some, this was their first visit to the area (30%; 6 persons), or a stop on their vacation route (30%; 5 persons). The remaining 40% of the excursionists (7 persons) often came to the Ardèche for the day to visit sites or hike (most from Lyon, located 2 hours away by car). For one-quarter of the persons interviewed, the Cavern was their motivation for coming to the Ardèche. For the others, individuals spending at least one night in the area and representing 75% of the persons interviewed, the Cavern was one activity among others during their stay of a few days (20%), up to one week (40%), two to three weeks (12%). The Cavern was thus a complementary activity during their stay.

The motivations for visiting the Cavern fit mainly into seven variably combined categories:

1) opportunity: “we’re on vacation in the region, very close, and it was a good activity for a day” (FR_6) or “because they talked so much about it on TV! And it was on the road to our vacation spot (FR_9);

- 2) interest, or great interest, in history and general culture, and out of curiosity: “just because it’s interesting to do something different, to be cultivated a little and to see what is interesting in the region other than walking and swimming” (FR_12); “That’s a part of origins, I’m fascinated by history and by prehistory, thus yes, that is one of the subjects which interests me a lot, the history of humanity in a general way” (EN_3);
- 3) the importance of memory: “this is part of our history, it’s our memory, it’s something to see. We should see it that’s all. It’s amazing, and we realize that 36,000 years ago, they had all they needed in their brains” (FR_56);
- 4) education: “the children see that in school, so we came to see it in person” (FR_41);
- 5) to be in a cave atmosphere: “Out of curiosity too, we wanted to see what it’s really like to see the cave paintings in person, and to be in an ambiance a little like that” (FR_32);
- 6) for the technical prowess used to create the replica: “to see the performance, see what they were able to do, it’s apparently very well preserved, to see what we can reproduce identically, it’s true that it’s a performance and it’s interesting to see that” (FR_29);
- 7) to enter into contact with history: “When an image plunges you into the past it’s extraordinary. Stone has the same effect in fact. When you visit a 12th-century monument, it’s extraordinary to realize that they made that 1,000 years ago. It’s very humbling to see what our ancestors were capable of doing. With this replica of a decorated cave, it’s the same, the same process, come to see and feel what our ancestors did” (FR_55).

All the persons interviewed were very satisfied with their visit, with gradients ranging from, “I had a good time” (FR_17) to, “It was really magnificent, magnificent, we come out of there mesmerized. We’re really... It was incredible. Even if we’re in a reproduction, we’re totally immersed, we really believe it” (FR_38). The majority (80%, 56 persons) said that at one point or another, they felt like they were in a real cave. There are nonetheless gradients in the speed with which they felt immersed.

For some (20% of the individuals that felt like they were in a real cave, or 11 persons), it was immediate: “from the moment the doors open, we’re plunged into the cave. Even just the height, when you see the ceiling, the concretions, you feel the coolness, the humidity, you’re in the dark. The stalagmites look very real. Yeah, you have the impression right away of being in the real cave” (FR_25).

For most (60%; 34 persons), it happened after five or ten minutes: “the quality of the work to make the reproduction is incredible. We really have the impression that it’s a real cave, there’s the temperature, the freshness...the ambiance. It’s really cool, it’s amazing. At first, we wonder how they did this and then after five minutes, we let ourselves go. And at the end I even forgot to ask how they made the replica” (FR_1); or “After 10 minutes, we really have the impression of being plunged in the real cave, we no longer feel the sensation of being in a reconstruction, it’s completely forgotten” (EN_8).

Finally, for 20% (11 persons), this impression is partial: “the abstraction of not being in the original doesn’t work all the time. When we’re standing in front of a panel and we have time to look at the artworks in detail, yes, we feel like we’re in the real cave. But when another group arrives, and you see lots of people, it doesn’t work anymore because we know that many people aren’t allowed in a visit to a real cave” (FR_21).

Five main elements contributed to the feeling of an authentic experience:

- 1) the décor: “the draperies and concretions are so well done that you forget you’re in a copy” (FR_4);

- 2) the ambiance: “We’re plunged into a natural environment, we have all the sensations, the temperature, the obscurity, and then it’s true that all they were able to do millions of years ago is really impressive, it’s touching” (FR_2);
- 3) the details represented: “when we saw that human footprint, I think that’s impressive, that really moved me, and the little hand with the little finger. That shows that they were here. And the bear claw marks too; it’s impressive to imagine that these people and the bears lived in the same place” (FR_26);
- 4) the discourse of the guide and even more so, their knowledge: “I completely got loose from the fact that it was a false cave. And I really think the guide played a big role, she put us in the shoes of the discoverers before we entered into the cave, and I saw it completely” (EN_5);
- 5) the audio guide headset system: “the headset really helps us to get into it. It isolates us, when we took them off, we could hear the footsteps of the other groups, actually, we see that that also makes it easier to concentrate and look more closely at what there is to see, to forget the other groups. The headset puts us in a bubble, so we can let ourselves be carried away by what the guide is saying” (FR_11).

For the 20% (14 persons) that didn’t feel like they were in a real cave, along with those who felt it only part of the time (11 persons), these limits were linked to two main factors inherent in the characteristics of the replica and how it is visited:

1/ a fault in the atmosphere: “they really need to work on the environment because it’s not cold like when you go into a real cave. The volumes, the concretions, the decor, there’s nothing to say, it’s perfect, but they need to work on the ambiance” (FR_43).

This problem of the atmosphere is cited whether or not the individuals have already visited a cave with concretions, a decorated cave or have already seen the images of Chauvet before the visit:

* FR_51 said, “no, frankly no, I didn’t have the impression of being in a cave. No because I’ve been in caves and we’re not dressed like that. It’s cold!! In the Gouffre de Padirac you have to wear a sweater, and not flip flops, or else it’s not good, you freeze during the whole visit”.

*FR_33, who had never visited a cave made the same observation, “I’ve never visited any real caves but I think that in the real caves we feel the temperature differences, the odors too, which we don’t have here because it’s plastic, and the emotions aren’t the same either. I’m sure about that, that we don’t feel that. But the reconstitution is magnificent, that doesn’t take anything away from that, but the real emotion, we really have it. I also think that in the 8000 m² we must feel the surface. I think we must feel the difference in temperature and the dimension”.

*And inversely, people who had already visited several caves had the opposite feeling. FR_52 said, “we really have the impression of being immersed in the real cave, we don’t feel at all like we’re in a reconstitution, we forget it completely.” And some even appreciate the comfort of the visit. FR_5 said, “It was a little cold at the entrance, I was afraid that it would be during the whole visit, but I think it’s to give the impression of going into a real cave. Luckily it wasn’t as cold afterward. No, it was warm, it’s nice. We have all the advantages of being in a real cave, without the disadvantages.” These remarks are similar to what Paul Bahn wrote about Altamira (2007, 141–142), “in many ways, the replica outdoes the original,” suggesting that the technology developed into copy enables the visitor to have a better experience than in the original cave.

These contrasting results underline the relative and individual aspects of the experience, showing that the perceptions of the visitors depend on the life history, past experiences and sensitivities of each person, as well as the amount of time between these past experiences and the current visit.

2) the timing of the visits: rather surprisingly, visitors did not mention the presence of other groups as a factor that limits the quality of the experience. This is in part due to the skills of the guides to manage and regulate the timing of the movements of the groups “so that no one really notices that the next group is pushing from behind; but all it takes is one problem (poor coordination of the guides, crying baby, etc.) to easily cause a traffic jam (especially in the summer). Then everyone quickly feels crowded” (commentary of a Cavern guide, summer 2017).

It is also related to the lighting, which partly hides the other groups, and to the use of audio headsets, which limits the noises coming from other visitors. FR_48 said, “the audio guides are great, they let you concentrate on what the guide is explaining and that way we don’t hear the noise of the others.” On this point, the results would almost certainly have been very different if the interviews had taken place the day after the opening of the site in April 2015 (James 2016). The presence of other groups is mostly cited due to their rapid rotation (change of station every 5 minutes), a rhythm that is presented as a factor that affects the experience of authenticity. FR_3 said, “when I looked at the reproductions, I really forgot where I was. But at the same time, we don’t spend enough time in front of the panels. The panel at the end is really frustrating, we don’t have time to see the details before the other group arrives and we’re pushed out. If they increased the time spent in front of each panel, we would be able to absorb this whole atmosphere.” And EN_1 said, “I’m not saying that the visits should be an hour longer, but at the end, we could have three minutes more for the last stations, it would allow us to be more immersed with the works. But now it’s still superficial; we don’t have time to feel things completely. These paintings are 36,000 years-old and we pass in front of them in 5 minutes; I find that it’s disrespectful of what our ancestors made.”

The predisposition/motivation of the individuals to imagine the replica as the real cave, and to fantasize about the visit to the original, also influences the quality of the experience they have. As FR_60 said, “I went [into the replica] with this idea in mind, that this was a real cave; you could say that I was well prepared! I’m really impressed because it looks like these drawings were just made, even though they are several thousands of years old. And then what I liked is all these people who made these drawings without having the originals in front of them. It’s just observation, and I really admire that they were capable of making them. In 36,000 years, we really haven’t invented anything”.

The degree of falseness, however, does not seem to play a major role, and knowing that one is visiting a false cave does not exclude the feeling of an authentic visit: “I knew I was going to visit a fake. And when we know we’re going to visit a replica, it’s difficult to believe we’re in a real cave. But that doesn’t mean we can’t appreciate the visit and let ourselves play the game (...) The magic works, there’s no problem, we really believed. I knew that it was reproduced and that we weren’t in the cave, but the magic worked, it’s fascinating. The precision of the drawings, the atmosphere, we really believed we were there” (FR_27).

This transversal analysis of the interviews underscores the central role occupied by materiality in the experience of authenticity, in concordance with the research of Jones (2009, 2010). On this topic, 96% of the individuals interviewed (67 persons) indicated their preference for a material replica over a virtual one: “a physical replica is more alive; it transmits more emotions than something that is completely virtual,” (FR_1); “It’s because we move around, because our body is engaged in the replica that we have the impression of visiting the original. We have to walk through the middle of something to feel the atmosphere” (FR_47); “I’ve already had the experience of virtual reality headsets, and it’s not very detailed. A replica that we can walk through enables us to better understand things. It’s concrete, real, even if we can’t touch it, it’s still a reality, which helps us to understand the volumes, the movements, which isn’t possible with the virtual” (FR_40). These excerpts confirm that in contrast to

virtual 3D models, a physical replica creates a physical connection back to the people who made the original and enables one to feel “the pastness” (Holtorf 2013).

In the end, the feeling of being in an underground environment, the materiality of a replica, and the sensitivities and past experiences of the individuals combine together according to variable geometries that lead 93% of the persons interviewed to have an experience of that which makes heritage, whether or not they had the impression of visiting a real cave (65 persons out of 70¹⁴).

This result was obtained from our analysis of the words used by visitors to qualify their visit to the replica. Inspired by the work of Jones (2010, 189), who argued that, “When people experience a sense of the genuineness, truthfulness or authenticity of objects, it is something akin to aura or voicefulness that they articulate. It is the unique experience of an object, and crucially its network of relationships with past and present people and places, that are important”, the lexical fields of wonderment, emotion and feeling, as well as speaking of the replica as if it were real, were considered as markers of a heritage experience. For example, the following responses show the hallmarks of a heritage experience:

EN_4: “even if that it’s not the real one, frankly, I was fooled, it’s as if I’ve visited the Chauvet Cave;”

FR_46: “It’s like a big slap in the face. Frankly, those last scenes are crazy. I’m still thinking about them. I had goosebumps, especially at the last two stops, the horses and lions. I was speechless, ready to drool. Honestly, I was amazed;”

FR_57: “for me, it’s really incredible to see what the first humans did. It’s a little like touching our origins, and touching them close-up, that touches me too; from the first minutes, I really felt it, even if I knew that it was a reconstitution, this contact with the origins really touched me, you could feel the energy of the oldness.”

Conclusions

Our analysis of the perceptions of the visitors attests to the ability of the Pont d’Arc Cavern to promote “a sense of authenticity”. Though it does not substitute for the original (James 2016), this replica thus fulfills its role as a “powerful loci of authenticity” (Jones 2010), and it has an “extremely successful auratic effect” (Foster and Curtis 2016). Experienced as being authentic, the replica forge a relationship between the public and the world of their origins, thus confirming its heritage function. As the replica is the place where visitors may have an experience of that which makes heritage, linked to a feeling of authenticity, the results of our public survey confirm an extension of heritagity between the original and the replica.

This extension of heritage between the original and the replica raises questions as to what the copy is showing and the effects of the choices made in the construction of a replica. A site developed to facilitate movement, modern health and safety, as well as optimal observation of artistic representations, inevitably leads the tourist to take routes that they would not have taken in the real site. Does this matter?

The feeling of authenticity that the visitors have in the Pont d’Arc replica is not synonymous with the experience that they would have if visiting the original cave since the replica consists of both an anamorphosis and a facsimile, and as such, it constitutes a new entity, therefore following the logic of a “creative presentation” (Morin 1999). Moreover, as underlined by Clottes and Chippindale (1999, 198), “reconstructions and re-enactments can never be fully authentic because the people who experience them are not “authentic” since, in the 21st century, people forcibly perceive their environment differently than Aurignacians did, especially given the environmental changes that have occurred over the past 36,000 years.

In reality, no replication is free of interpretation. “The past is continually constructed by individuals or groups who, for whatever reason, choose to interact with it (...). A replica is a construction based on contemporary interpretations of the past” (Stone and Planel 1999, 1-2). Since the replica of any object/place/monument is a result of choices and negotiations, it transmits a discourse marked by the Authorized Heritage Discourse (Smith 2006), an expression of a legitimate dominant culture (Bourdieu 1979). In the case of the Chauvet-Pont d’Arc Cave, the replica transmits a specific manner of perceiving rock art (Walderhaug Saetersdal 2000) in which, since the discovery of Lascaux, the emphasis is placed on the artistic values (Bataille 1955). The cave is thus perceived as work of art, which when applying a monumental approach, is disconnected from its environment. A replica, in effect, does not consider the importance of the surrounding environment to the understanding of a cave (Geneste 1999; Clottes 2008, 2-4). Corroborating a principle of dissociation between nature and culture, the artistic and aestheticizing vision displayed by the Chauvet Cave replica inhibits an awareness of the archeological dimension of decorated caves. From this point of view, the replica completely ignores one of the objectives of any mediation/education endeavor concerning the past: “one role of archaeologists, interpreters and educators is to expose their audiences to the concept of other ways of interpreting the past while at the same time identifying and exposing any deliberate misuse of the past” (Stone and Planel 1999, 2). At a time of significant developments in holistic approaches to the challenges of heritage preservation and valorization, including the integration of cultural and environmental components with landscape approaches, it is surprising, to say the least, that the largest replica of a decorated cave of this type was not capable of being avant-gardist in this sense. Finally, beyond the context of decorated caves, the possibility of extending heritage between an original and a copy requires a reformulation of what is at stake in the process of heritagization. On this last point, our analysis of the relationships between the Chauvet-Pont d’Arc Cave and its replica, the Pont d’Arc Cavern, confirms the essential role of a feeling of authenticity and the experiential component in the process of heritagization. In the continuance of the research of Smith (2006) and Jones (2009, 2010), this case study demonstrates that heritage resides as much in the feelings that an object evokes as in the fabric, original or a reconstructed. While the material dimension of a replica plays an important role in the construction of a feeling of authenticity, it can be fictitious and authenticity is not an indispensable factor in the attribution of a heritage function. In the definition of that which makes heritage, authenticity is becoming secondary to the experiential component, itself conditioned by performative discourses and an assemblage of material processes. By the end, this analysis of the relationships between the Chauvet-Pont d’Arc Cave and its replica demonstrates that there is a dissociation in the triptych “authenticity, antiquity and heritagization,” and shows the need to approach heritagization today from the angle of experience and feeling.

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¹ <http://archeologie.culture.fr/fr>, consulted on 25/07/2018

² Since 2002, the southern Ardèche is one of the regions studied by several members of the EDYTEM laboratory in France with the aim to analyze the effects of Chauvet-Pont d'Arc Cave replica on the reformulation of the heritage and tourism dynamics of the southern-Ardèche region. This research has involved at least twenty field studies (one or two annual sessions of two to three weeks on average) composed of field observations, semi-structured interviews, grey literature analysis, and visitor surveys (Duval et al. 2017, Malgat et al. 2015, 2012; Duval and Gauchon 2013; Cachat et al. 2012; Gauchon 2009). Since 2015, new collaboration has been developed with the University of Western Australia through the ongoing Phd of Laura Mayer (2019). Drawing on the previous researches, the results presented in this article are based on data recently collected through the research program "*Singulariser les Territoires de Montagne*," funded by the Labex Item. This program has enabled us to conduct a survey of visitors to the Pont d'Arc Cavern in August 2016 and August 2017, as well as a series of semi-structured interviews with the regional stakeholders in 2015, 2016 and 2017.

³ The translation of quotations originally published in French is our own.

⁴ <https://whc.unesco.org/fr/list/30/>, consulted on 25/09/2018

⁵ Even if it is suggested, such as by the Caverne web site (<https://www.cavernedupontdarc.fr/preparez-visite-caverne-pont-arc-grotte-chauvet/que-faire-sur-le-site/>, consulted on 25/09/2018), to begin with the Aurignacian Gallery, most visitors start with the replica.

⁶ <https://france3-regions.francetvinfo.fr/auvergne-rhone-alpes/ardeche/jour-auvergne-rhone-alpes-s-installe-vallon-pont-arc-ardeche-1444643.html>

⁷ https://www.francetvinfo.fr/sciences/je-pensais-que-la-grotte-chauvet-serait-incopiable-mais-on-l-a-fait_857603.html, consulté le 25/07/2018

⁸ Since summer 2018, two new light scenographies were installed at stations 6 and 10. These are meant to reproduce the lighting of a torch and a grease-lamp. Because our visitor surveys before these innovations (summers of 2016 and 2017), the visitor's feelings about them are not addressed in this article. See also the article, « De nouvelles lumières pour la fresque des Lions à la Caverne », published 05/07/2018 dans la Tribune, <http://www.e-tribune.fr/index.php/le-mag/13483-de-nouvelles-lumieres-pour-la-fresques-des-lions-a-la-caverne>, consulted on 25/09/2018.

⁹ starting in summer 2016, one year after the opening of the replica to avoid the disturbance caused by the proximity of other groups. Each visitor wears a headset set to the frequency of the microphone of their guide.

¹⁰ For foreign tourists, guided visits in English, German and Dutch are offered at set times. If they cannot attend these visits, they can follow a French visit with an audio-guide playing a prerecorded discourse in their own language. The two visit types, a guided visit with direct commentaries (type 1) *versus* a visit with a pre-recorded audio-guide (type 2), do not produce the same experience. Even if the framework is identical, listening to a pre-recorded audioguide creates a lag between the discourse presented at the same time by the French guide. The panels are not always explained in the same order, and the timing of the pre-recorded discourse is not the same as that of the guide.

¹¹ The guides at the Pont d'Arc Cavern (around 50 throughout the year and 80 in the summer season) have very different backgrounds, such as history (mostly Medieval specialists), art history, tourism, general scientific guiding, or completely different sectors. Among all of them, only around a dozen have a background in prehistory. When the guides are hired, they must attend a four-day training session consisting of a general introduction to prehistory with some concentration on the Aurignacian culture and parietal art of Chauvet Cave. During this (short) period, they also accompany guides already working in the Cavern so that they may appropriate the discourses and guiding techniques already used. From this foundation, and also drawing from their own life experiences and education, they will gradually construct their own discourse.

¹² The choice of individuals was made to match the visitor profile of the Cavern: 80% of the visitors are French (followed by Belgians, Dutch, and English and German in smaller numbers). Only individuals that had visited the site with a live guide (Type 1) were interviewed. We did not try to understand the experience of the replica by non-French persons who visited with a pre-recorded audio-guide, and we accept that this might be different.

¹³ The number of individuals (70) does not permit a quantitative approach, which would in any case have had little significance for this exploration of visitor perceptions. The percentages given here are meant to contextualize the results of the investigation and cannot be extrapolated to represent all visitors to the Pont d'Arc Cavern.

¹⁴ Among the 5 persons who did not have a feeling of what makes heritage, three of them were the subject of very short interviews (5 minutes) and the information collected is rather poor. The two remaining persons were very frustrated by the lack of ambiance in the cave (FR 58) and the timing of the visit (FR_24), these two factors greatly limiting the quality of their experience.