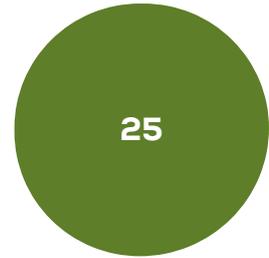




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View. Theories and Practices of Visual Culture

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Rethinking Paleolithic Visual Culture throughout immersive technology: The site "Cueva de las Manos" as a virtual "Denkraum" (Patagonia, Argentina)

authors:

Marina Gutiérrez De Angelis, Greta Winckler, Paula Bruno, Carmen Guarini

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Rethinking Paleolithic Visual Culture throughout immersive technology: The site "Cueva de las Manos" as a virtual "Denkraum" (Patagonia, Argentina)

The archaeological site named the *Cueva de las Manos* [Cave of the Hands] lays at the canyon of the *Río Pinturas* [Pinturas River], between the towns of Perito Moreno and Bajo Caracoles, in the Argentinian province of Santa Cruz. It includes the cave itself, the great walls beside the cave's entrance, and two major eaves or rocky outcrops (fig. 1). It records the hunter-gatherer groups who inhabited the site for 10,000 years. The parietal graphism¹ that can be found inside includes motifs such as *guanacos*, hunting scenes, anthropomorphic figures, animals, and the well-known negatives of hands, of which there are 2,000 (figs. 2–3). Figures, both animal and anthropomorphic, can be found inside the cave as well as on the external eaves. These were discovered by Father De Agostini² in 1941 and later analyzed by the anthropologist *Milcíades Alejo Vignati* in 1950. Archaeological research was initiated in the 1960s. In 1964 Carlos Gradin carried out the first explorations in the area, and from 1973 he undertook sustained work along with Carlos Aschero and Ana María Aguerre.³ Series of stylistic groups were identified, at first figurative, and later abstract motifs that replaced the former. These changes took place from 9,300 BC until 1,600 years ago, and relate to different human occupations of the zone.



Fig. 1. *Cueva de las Manos*, Santa Cruz, Argentina. Photo: Área de Antropología Visual, Universidad de Buenos Aires

The *Cueva de las Manos* has been listed as an Archaeological Heritage of Humanity site since 1999. As Gabriela Guráieb and María Magdalena Frere have pointed out, the fact of appropriating its heritage implies a way of understanding, accepting, and making it part of the life of the community. Administration is the result and consequence of how heritage is appropriated. "Administration involves all the practices related to heritage, starting with research and including as well conservation, protection, exposition, dissemination, and its touristic uses, among others."⁴ Moreover, the authors also say that sometimes a community develops a strong connection with heritage, allowing for a deep sense of belonging to emerge regionally. Nonetheless, on certain occasions this is not the case, as has happened with several sites in Argentina where there is no link with the past and its perception. This redounds to a lack of attention and adequate policies that could help to conserve and value the heritage on the one hand, and to a disconnection between the people and the sites on the other.

Based on a question about pictures of the past and their relation to the present, this research team started to register the *Cueva de las Manos* in 2018 with 360° video and Virtual Reality (VR). The first objective of the project is to promote a deeper connection regionally between the communities of Perito Moreno, Bajo Caracoles, Los Antiguos, and the site, as well as nationally, by using 360° video and the



Fig. 2. *Cueva de las Manos*, Site I, sector b, Santa Cruz, Argentina. Photo: Área de Antropología Visual



Fig. 3. *Cueva de las Manos*, Site IV, sector a, Santa Cruz, Argentina. Photo: Área de Antropología Visual

opportunities immersive technologies bring. The project aims to establish a deeper connection between communities, both those near the cave and those that inhabit the province of Santa Cruz, through joint work with state agencies (such as the Secretary of Culture) to design a touristic and cultural program where the material produced enables the generation – in local museums and schools as well as online – of experiences that are oriented not only to the dissemination of knowledge about the site, but also to its insertion into communities as their heritage. Currently the town of Perito Moreno counts on the Gradin Museum, still under construction, as the only space where the community can establish a link with its heritage. On the other hand, the cave has a very simple Interpretation Center at which the results of this project as an on-site VR installation could generate a new relationship between visitors and place. VR, expanded reality, and other digital resources are today increasingly present in museums and at archeological sites. The project intends to raise a proposal for an installation at the Gradin Museum and the Interpretation Center, as well as to make material available for schools from joint work with centers of culture, education, and tourism in the province. From the use of such new technologies, we began to think about the way in which visitors could face the pictures and imaginaries related to prehistorical times, which have always ordered how the pictures are seen and understood. When archaeological studies use the word “art” to refer to these pictures, they make use of modern conceptions to approaching images about which we are in the dark. Commonly, the point of many investigations has been to unravel what they mean, represent, illustrate, or symbolize. W. J. T. Mitchell⁵ as well as Alfred Gell⁶ suggest that pictorial studies should decode neither the meanings behind the pictures as a primary objective, nor the intentions of those who created them. Simon O’Sullivan⁷ also suggests analyzing images as “objects of encounter” instead of “objects of recognition,”

because encounters “produce a cut, a crack” which leads us to reflect beyond what we see. This is when “[...] interesting effects can occur, from which we can learn something new about past worlds.”⁸ An example could be the works of Mats Rosengren,⁹ which do not focus on what pictures mean or represent, but on what the fabrication processes can tell us about the human beings who created them. In his works, Rosengren reflects on how “[...] the archaeologists have been too occupied with the ‘origins’ and the background of the paintings, that is, what animals the paintings illustrate and represent, how naturalistic and accurately they are portrayed, instead of discussing what the practice of making images (the shadows on the wall) can actually tell us about the people crafting them.”¹⁰

The project at the *Cueva de las Manos* intends to think of these enigmatic pictures as “objects of encounter,” relying on the theoretical frame of authors such as Horst Bredekamp, who makes use of the concept of “aesthetic difference” developed by Gottfried Boehm¹¹ to reflect on objects created 200,000 years ago. The image as an artifact and a practice is a defining feature of humanity as a species, and cannot be narrowed down to figurative pictures; this enables consideration of a wider idea of “image.” Whereas “the concept of art, in its first and fundamental definition, includes any creative form,”¹² the concept of “aesthetic experience” is not exclusively artistic in its modern sense. Neither can such a conception be narrowed down to pictorial forms, as it also includes the fabrication of tools and instruments. Such is the case with the fishtail projectile points in Patagonia, due to the fact that they cannot be analyzed as if they were merely tools, because their special shape shows that there was recognition of aesthetic difference, as well as the will to reinforce this difference in a creative way, turning nature into pictures within a separate sphere. The distinction between pictures, ornaments, and tools means that these artifacts still remain behind museums’ display cabinets when we classify objects and pictures that do not

belong to our own culture and time. A perfect example is the case quoted by Carlo Severi in relation to a Zande harp, as it was catalogued regardless of the correlation between the shape and the web of thoughts, essential to understanding the nature of the object. The shape and the so-called "decorations" do not overlap with a more important or defining function; on the contrary, they constitute an object that cannot be set aside from a voice.¹³

This change in the theoretical perspective allows us to begin understanding the way in which producing images transformed the lives of the human beings who lived in the caves. From this point, our work in the *Cueva de las Manos* obliged us to reflect on how these images of the past could be linked to the present and make us think over a whole constellation of ideas, not only about past times but also about some features of the visual.

Our hypothesis affirms

that immersive media stimulate users to experience the spatial and cinematic sensoriality of the images inside the cave, and at the same time to take part in a non-linear narrative which encourages users to pose open questions instead of trying to decode pictures or even "read" a finished tale. We deeply believe that experiencing the atmosphere is fundamental to understanding not only the space itself but the existence of a whole Paleolithic visual culture, along with its connection to the present. The *Cueva de las Manos* project is still in progress, and a second stage related to the field register will be held in 2020. The initiative will take shape in two different formats: an interactive Webdoc and an installation for museums. One of our

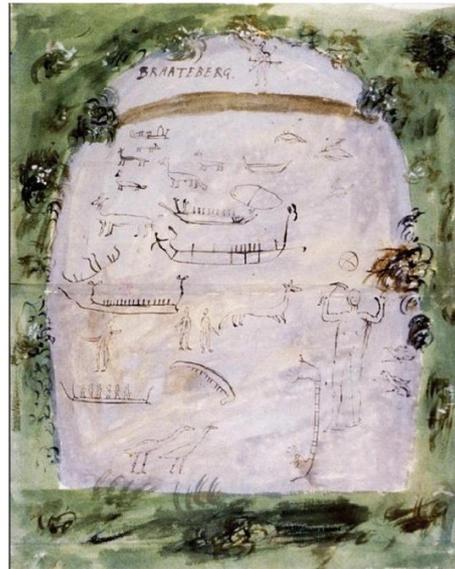


Fig. 4. Peder Alfsson, first representation of rock engraving, 1627, Bohuslän. Vitlycke Museum, Sweden

main objectives is the use of VR helmets at the site itself, where visitors would be able to access sectors that are normally closed to an audience, and to interact with our main hypothesis. The use of immersive technologies makes us think in terms of expanded visual anthropology, which implies new narrative strategies as well as methodologies to think *with* pictures.

The problem around “rock art”

In 1627, Peder Alfssøn pictured some carved rocks in Backa (Bohuslän, Sweden) “[...] by ink drawings painted with watercolors” (fig. 4). These pictures gave birth to the study of parietal graphism, although this was an isolated attempt. 150 years later, in 1784, the Danish historian Peter Fredrik Suhm showed interest in those pictures,¹⁴ which were to be influential on later studies that took place during the 19th century, when intense debate about the origins of man and “primitive art” took off. The first pictures that were made of parietal graphism in the 20th century were handmade drafts, mainly of the well-known European caves Altamira, Lascaux, and Chauvet. However, the case that was key to establishing a lasting imaginary about prehistoric times was the illustration by Emile Bayard for the book *L’homme primitif*¹⁵ (fig. 5) by Louis Figuier: a man standing inside a cave, drawing on the walls. This settled the idea of modern art as suitable for prehistoric practices.¹⁶ In Figuier’s picture, the cave – which seems to be a small artistic atelier – shows a standing man carving an animal

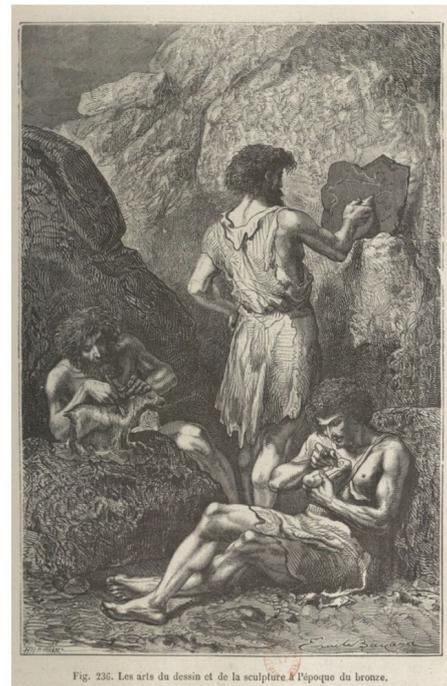


Fig. 5. Louis Figuier, *L’homme primitif*. Illustration by Emile Bayard, 1870. Paris: Hachette

figure, while two partners by his side build a sculpture of an animal and a print made on stone or bone. The illustration is interesting in many ways, but especially for the fact that it links the figure of the man to the famous Maid of Corinth, who configured the myth around how art was born.

In a similar way, when scholars interpret pictures made since the invention of the photography, they tend to assume that men and women always had the intention of copying nature in one way or another until the camera arose. This mimetic and aesthetic vocation encouraged the habit of describing Paleolithic pictures with adjectives such as “naturalist,” “figurative,” or “unrealistic.” The question of understanding what they mean or which animal they represent led to the use of modern concepts to analyze pictures that are dark and hard to access even for specialists. These approaches and ideas tell us more about the thoughts of humanity’s past which every era built, rather than about possible meaning. This notion was already present in Louis Figuier’s book, which condensed the ideas involved in the debates of his time related to new discoveries and conceptions about the first human beings. The theories about mankind’s origins opened up new ways of depicting the remote past; however, this scientific view of the origins of our species looked back to ancient formulas about the environment, wild animals, and the practices of hunter-gatherer groups surrounded by rocks, bones, and animal remains, while Figuier’s book showed prehistoric man with modern features and even sophisticated tools at times.

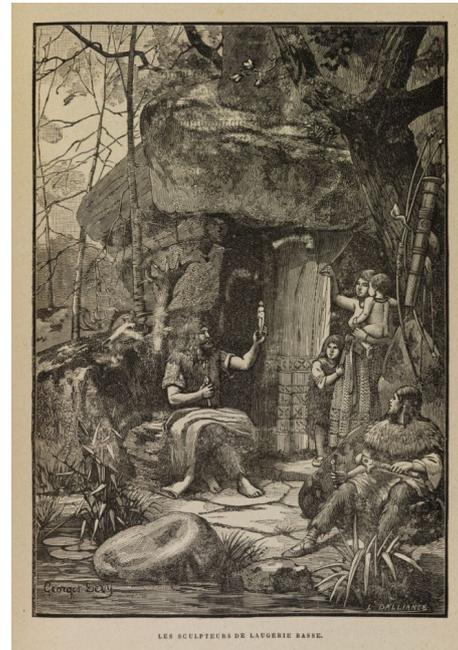


Fig. 6. Henri du Cleizou, *La Création et les premiers ages de l'humanité*, 1887, p. 265. Paris, Marpon & Flammarion

From the same period, we can find another image by Henri du Cleiziou (fig. 6), which shows a prehistoric family in a scene that clearly exhibits an aesthetic goal in the creation of a prehistoric picture. In it, a man, looking like someone from the 19th century, makes an anthropomorphic sculpture and then shows it to his wife and children, in an environment that seems to be separated from the reality that could actually be reconstructed from the archaeological remains of the time.

By the end of the 19th century, new discoveries, alongside the fascination with the idea of finding the missing link within *Homo sapiens'* evolutionary line, widened the existing universe of technical images with relation to the origins of mankind. Primitive men were now drawn with simian features, even though the formulas in use continued to reproduce the idea of man facing nature, wild animals, and creating his own tools. Pictures such as *Pithecanthropus* by Lancelot Speed in Henry Knipe's book *Nebula to Man*¹⁸ (1905) work as examples of the

abovementioned idea (fig. 7). It is in the same book where a bucolic picture of a man tracing lines onto a mammoth tusk can also be found. Artistic creation is shown in an almost mythical sense (fig. 8). To the contrary, a picture by Pierre Gatier (fig. 9) from 1930 suggests a magical interpretation of parietal art, in which men observe a ritual where one carries the head of an animal, similar to illustrations and pictures of Native Americans. All such pictures had a tremendous impact on how Paleolithic men were imagined and thus popularized: a primitive artist in front of a wall – as if it were a canvas – making isolated pictures,

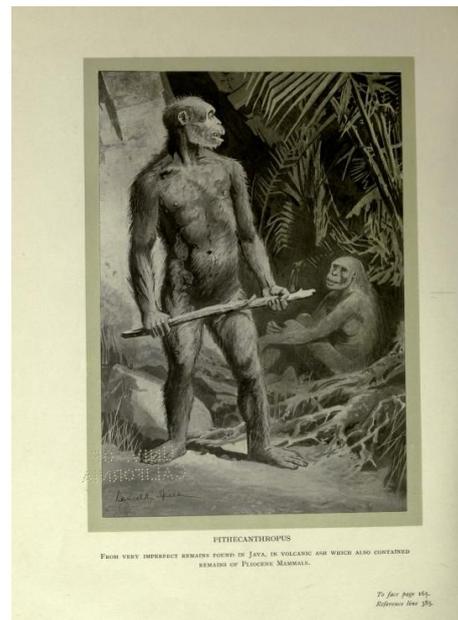


Fig. 7. Henry Robert Knipe, *Nebula to Man*, Ilustración Lancelot Speed, 1905, p. 302. London : J. M. Dent

similar to works of art that were created for aesthetic pleasure or as magical vehicles belonging to ritual practice. These images are connected to a particular formal choice that resulted in how they were then analyzed and approached. The way scientists produce and use pictures shows more than just their conscious intentions or their writings and formulas. Technical images are not simple illustrations but productive agents, elements that reveal the multiple layers involved in the epistemic process. Therefore, all these pictures have a constructive role within science,¹⁹ and the same can be said for scientific dissemination by social media. In the book by Jean Clottes, *Cave Art*, we can find expressions such as “beautiful figures” or “rock art” used to describe the most important and famous sites. It refers to such caves as the Sistine Chapels of rock art, and intends to thoroughly decipher the meaning behind their images.²⁰

Not only is the use of the term “art” to think of these pictures problematic, but it also introduces a value judgment which could allow a hierarchy to emerge: some caves could be more beautiful, complex, naturalistic, or figurative than others. The same insistence on the use of the term “art” arose when, in 2008, a piece of news was published referring to the discovery of the “oldest rock-art painting humanity has ever created and which gave birth to figurative art,”²¹ arguing against the (long-discussed) idea that art was a European invention. The category of “art” assumes supposed features related to the creation of pictures based on theoretical and methodological approaches which must be revised. The pictures by Figuié seem to have outweighed archaeological ones when it comes to how to conceive of prehistoric images, even posing a strong influence on the latter. Archaeology needs to approach new theoretical perspectives, so as to overcome such a problematic concept as

“art”; contributions made by *Bildwissenschaft* [image science] could be a promising field for archaeological studies.

One of the questions posed by the present project concerns how pictures such as Figuié’s – but also the logocentric theories which are predominant in thinking about visuality – have established the use of the concept of “rock art” as the key to developing studies to describe those images and

understand their meanings and

interpretations. It is time we began to understand them

from interdisciplinary theoretical frames about visuality. How

can these pictures from the past relate to our present ones and

make us revise an ensemble of ideas about that past? The walls

in the *Cueva de las Manos* were not “canvas” in the modern

sense we give to that particular support of the pictorial medium.

Whitney Davis points out that we cannot “read” these pictures as

if they were pages that we can turn over, one after another, and

that it would be better to understand them as a space under the

logic a palimpsest implies, articulating different times.²² We need

to consider the caves and their environment as an apparatus of

the image.

So-called “cave art” has been criticized by archaeologists such

as Margaret W. Conkey,²³ Randall White,²⁴ or Oscar Moro

Abadía and Manuel R González Morales,²⁵ as it imposes

a modern view about what an image is and can do to pictures

that belong to a 34,000-year-old past. These authors suggest

that we should study Paleolithic visual cultures regardless of the

models art history imposes on parietal graphism in caves. Thus,

Conkey poses an important question: how can we understand

visual images without any text or words accompanying them?

We face an enigma when it comes to understanding or



Fig.8. Henry Robert Knipe, *Nebula to Man*, “Cave Men. Hunters-Artists”, Illustration Lancelot Speed, 1905, p. 302. London : J. M. Dent

interpreting parietal graphism. These were the productions of hunter-gatherer societies in which pictures may have had significant cultural value, even if they were not made in order to be seen. When we try to “read” these pictures, our own representations (photographs, drawings) and the choices we make about which pictures to show in a book, for example, play a key role in our interpretation of them, even in their original locations, which are hard to reach.²⁶ The contributions made by evolutionary aesthetics and cognitive archaeology²⁷ have established that it is vital to revise the ways in which theories about parietal graphism have been conceived.²⁸

By the end of the 19th century, studies about the origins of art were bisected: between those who supported a realistic beginning, and those who claimed the source was abstract and ornamental. On the contrary, authors such as Robert Vischer have affirmed that “an object that is perceived is also an object that is imagined, an appearance.”²⁹ As Severi suggests, this intensification of the image links it to the beholder, enriching it by a chain of “mental connotations that can turn out to be essential parts of the image, even if the external one is not present.”³⁰ According to Vischer, this is related not only to art: the process of visual empathy is more general, and comes before any perception of shape, as a physical characteristic of every human being.³¹ These approaches set the possibility of thinking about “visual thought” belonging to humanity, not only in relation to the interpretation of European art. Such reflections opened the way for conceptions like Aby Warburg’s, who



Fig. 9. Peier Gatier, colour crayon, 1930. Biblioteca central del Museo Nacional de Historia natural, Fondo Breuil-Boyle, Br, 22. Bibliotheque centrale MNHN, Paris

considered that the mental representation associated with a material remnant exceeds the content of the image. “Visual empathy” leads us to think of the active use of our perception, settling a dialogue between the look and the natural shape. The concept of “shape” in the multiple forms studied by *Bildwissenschaft* offers a way of understanding the original search for visual shapes (as a process of trial-and-error), as well as the conventionalization of pictorial shapes and procedures that go beyond the artistic category. The figures, materials, and techniques used in these pictures are related to social activities, geographical accidents, and the circuits and flows of mobility; they are not isolated, “figurative” representations. By applying these approaches to the *Cueva de las Manos*, we can ask ourselves about a basic matter related to the agency of the images, and can also establish a link between contemporary visual culture and Paleolithic visual culture, as it is shown that aesthetic experience can exist regardless of an artistic one. The present expanded experience can help us visualize the importance of establishing connections between archaeological studies, new immersive technologies of the image, and queries posed by the researchers of *Bildwissenschaft*.³²

The cave as a virtual *Denkraum*

Discussion about the concepts of “art” and “painting” determined the basis of the present project at the archaeological site of the *Cueva de las Manos*, along with the use of the immersive technologies of VR and 360° video as a methodology to explore visuality understood as a corporeal act. The use of such image technologies is not new; archaeology has already used diverse image media. Archaeologists have also produced pictures to visualize their interpretations of ancient buildings and landscapes of the past, or even to recreate and rebuild perishable materials such as clothes or facial hair. According to

some authors, such pictures risk putting into practice present-day ideals rather than reflecting past reality.³³ This criticism of contemporary forms of visualizing prehistory is linked to a loss of the "original" context, so representing artifacts graphically and exhibiting those graphics could lead to a biased conception associated with the relation between the images and the visualization of knowledge. Despite this, drawing and taking photographs is a crucial part of most archaeological practices, from the moment excavations are registered until the final relation between the text and illustrations that are published in archaeological literature. Such pictures play a major role in the construction of a hypothesis and argumentation. The archaeological perspective on material remains and prehistoric societies involves and is influenced by multiple modalities of graphic representation. These "loans" between different image media and the techniques used in producing pictures have gained new interest – even though it is also criticized – with relation to the fundamental role pictures play in contemporary visual culture. However, they have not been the main focus of reflection, neither in terms of their specificity nor as a medium of theoretical and methodological development. As for anthropology and archaeology, both have begun to experiment with online platforms, VR helmets and installations, virtual tours and multiple experiences. Even though experiments took place in the 1980s in specific centers for research such as the *Zentrum für Kunst und Medientechnologie* in Karlsruhe, museums have only recently opened their doors to immersive technologies and virtual, expanded, and augmented realities. Within the artistic field, we can find experiences understood as places of knowledge. For example, projects such as the *Knowbotic Research* group in the 1990s, which experimented with the intersection between technology, information and knowledge, virtual immersive reality, and agency on the net. These initiatives intend us to undergo new experiences with our

real eyes, hands, and ears. Interactivity and telepresence are vital to the *Cueva de las Manos* project, as a new kind of perception. Visitors can choose, once inside the scenery that VR provides, where to go and from which point of view they want to see the virtual cave. They are the main actors in a space that is both timeless and hastened. The spectator is now “in” and not just “in front of” the picture. We can say that they are “in” the picture as they have become part of it. Seeing, hearing, touching, and feeling are part of the visual experience. As Oliver Grau points out, installations show the connections between art and science, and how VR enriches memory through our combined association of pictures and sounds in different files and documents.³⁴ The cave has become a heterotopic place to think about.

The project that we began in 2018 thinks of VR and immersive experiences as a space to reflect on how images such as the parietal graphism in caves are produced. If we only think of them as art, we narrow their existence (by just figuring out or decoding an isolated meaning) and place (as if it were only the cave), forgetting that we are facing a whole environment where their agency becomes effective. A clear example of such is the iconographic scene at site IV, sector A (fig. 10) in the *Cueva de las Manos*, where a depiction of hunting takes advantage of the natural form of the rock, which already includes a crack between two blocks, similar to the canyon just opposite the cave, where the event itself probably took place. As Aschero says, the scene uses the rocky support as a topographic and virtual space. The cracks in the wall work as a small valley where men and guanacos moving up and down can be seen. The spaces between the hunters who are surrounding the guanacos



Fig. 10. *Cueva de las Manos*, Site IV, Sector a, Santa Cruz, Argentina. Photo: Área de Antropología Visual

show lines of dots that suggest the traces the men left, or the position of other hunters. Each scene in the cave uses a different color: ochre-yellow, black, and red, in chronological order.³⁵ The surface of the rock becomes a medium that shows the existing dialogue between the look and the natural shape, which has been referred to by Vischer. The whole is an inseparable set in which each element expresses a cinematic comprehension of actions via pictures. In the VR helmet, the project invites users to interact with the vision of the rock as a virtual space, and its projection onto the real space. As each scene has a distinctive color which allows us to observe figurative transformations, Aschero found a progressive decrease in the size of the scenes, which go from 12 m in site IV, sector B, to just 60 cm, including smaller figures (figs. 11–12). This process may have taken place 8,000 years ago,³⁶ and can be experienced inside the immersive environment by using different visual resources. Vittorio Gallese and Michele Guerra have rightly pointed out that there seems to be a common thread between the prehistoric images and the Lumière brothers, while highlighting the propensity of human beings to use inert matter to reproduce the life of the world through images. Whether infusing them with movement or its possibility, the technological evolution of the species seems to be linked to the constant drive to animate the material world through movement.³⁷

These examples show that analyzing the figures without the medium, support, and shapes they express would just isolate the visual and corporeal aspects. The cave is the medium where the images make sense and where they were made. Authors such as Dieter Mersch and Stefan Hoffman mention the importance of rebuilding an “aesthetic” or



Fig. 11. *Cueva de las Manos*, Site IV, Sector b, Santa Cruz, Argentina. Photo: Área de Antropología Visual

even perceptual genealogy³⁸ of the medium as a sensitive environment, which was recovered in the second half of the 20th century by the philosopher of technique, Gilbert Simondon, taking into account anthropologist André Leroi-Gourhan's concept of "*milieu technique*." Simondon uses the expression "*milieu associé*" to refer to the techno-aesthetic environment where the individual and society build each other, based on relations between sensitivity, technique, and nature.³⁹

The virtual cave as a medium can be understood as a *Denkraum* [thinking space], in Aby Warburg's conception. It is a place of reflection which works as a *Zwischenraum* [interval or gap], based on operations involving distancing and montaging.⁴⁰ We

wonder how it is possible that this space can work as a place to reflect, a place where the body is totally involved with pictures and the medium. Inside this virtual *Denkraum* it is possible to provide users with a sensorimotor experience that places them in front of the pictures, while this would trigger reflective processes on visibility – as an act of the body – instead of a search for meaning. This *Denkraum*, understood as a space to think about relationships between past and present images (forms), is also a space that the project proposes as a means to experience the main role of the body in the creation of images. In that sense, Gallese and Guerra propose the concept of "embodied simulation" as the basis of a new theory of perception that we can apply to the functioning of various image media, as they structure not only actions but also their perception, along with their imitation and imagination.⁴¹ The virtual cave invites us to experiment, in an immersive medium, with how different theoretical perspectives modify the way we define the visual, much as the first philosophical theories did



Fig. 12. Cueva de las Manos, Site I, Sector c, Cave, Santa Cruz, Argentina. Photo: Área de Antropología Visual

with their conception of representation, basing their approach on the concept of mimesis – the imitation of nature or an ideal. As John Michael Krois points out, most modern theories about representation have taken different approaches, focused on what Ernst Gombrich names the *beholder's share*.⁴² The virtual cave is based on a different point of view, as it pays attention to the pictures, the shape, and the bodily experience. It is not our intention to decipher or “read” those distant pictures, but to understand and experiment with their specificity from the “inside.” For instance, Gottfried Boehm talks about *deixis* – the fact that pictures show something – as a logical and primary phenomenon to represent or exhibit something, otherwise invisible, to someone.⁴³ From this viewpoint, pictures are active and able to generate various effects which, according to Krois, are cognitive, practical, or affective. Pictures thought of as objects produce what Bredekamp calls “image acts,” which refer to what pictures do, not only what people can do with them. The image is taken into account because of its capability to act, in interaction with the subject. The image act poses the question about how pictures can go from latency to the externalization of feelings, thoughts, and actions when we touch or watch them. That is to say, the image act produces an effect on our thoughts and actions via the force of the image itself and the interaction. The virtual *Denkraum* allows us to consider this feature. There exists an inner power within the shape that leads us to understand that pictures are not in front of or behind reality, as they are not a simple consequence but rather a form of its condition.⁴⁴ The image act reflects how and why pictures affect the way we think, act, or feel. Bredekamp makes use of Ernst Cassirer's concept, *symbolische Prägnanz*, as it considers every object not only as a medium of a projective interest, but as a trigger of an event in which the observer becomes the object. This ego of pictures considered as created artifacts holds the capability of building the subject. The image act seeks to

understand the subject as a creator, and at the same time as a product of the very shapes they create. This perspective, which can be found in Bredekamp, Krois, and Boehm's works, focuses on the comprehension of the image, setting aside theories centered on mimesis or the idea. Krois has introduced the concepts of "enactivism" and "embodiment." Pictures are enactive because they can embody information, and our body is a sensorimotor-perceptive complex.⁴⁵ Moreover, this virtual *Denkraum* can reflect on the nature of the visual through the use of VR, putting together past and present pictures due to their shared anthropological condition. Image and perception are both an experience and a practice of looking, since "looking" is not a competence but an experience. Boehm, by trying to reflect on the way pictures create sense, establishes the existence of a logic belonging exclusively to the image, "defining *logic* as the consistent production of sense throughout truly iconic media."⁴⁶ Bredekamp, on the other hand, focuses his attention on the analysis of shapes as a central point of his theory of image acts. Asking what an image is means testing our knowledge on visual configurations, as well as adjusting our methods in order to understand the specificity of the visual.

Proposing a virtual cave intends to create an immersive experience where users can ask themselves questions about pictures without the need to explain them or give them meaning. Paleolithic and contemporary pictures express their close relationship as they show not only the process of fabricating images – a human need – but also how we act when we are in front of them. Confronting the image, as Georges Didi-Huberman puts it, opens a door to thinking about the way this immersive virtual space and the Paleolithic pictures become a place where image, tools, sensitivity, spatiality, the optical, and the haptic are articulated. The famous pictures in the Chauvet cave in France, which can be seen in Werner Herzog's film *Cave of Forgotten Dreams* (2010), require a cinematic

understanding of the visual experience of assemblage inside the site. As we have said, looking is not a competence but an experience, and the cave is an inseparable space between pictures and the body.

The spatial and cinematic sensitivity of the image can be experienced through the immersive medium, and users get close to these open questions instead of the reading or decipherment of the pictures. The "biology of art" (Pitt Rivers, Haddon, Holmes, Stolpe) suggested "a possible dialogue between the look and the natural shape," as Severi says,⁴⁷ as did the German tradition in psychology and ethnology at the end of the 19th century (Lotze, Vischer, Bastian, Warburg). It is necessary then to reconsider the shape of the rocks and walls in Paleolithic caves and the different forms of mobile art as a space for projection related to an "active imagination," which presides over the birth of art and the creation of pictures. Empathy, emotion, imitation, and embodiment are part of an agenda of the history of art and aesthetics.⁴⁸ But old topics such as symmetry, abstraction, replication, variation, and rotation are also part of our evolving past (and our bodies).⁴⁹ Within the field of neuroscience, we can find the concept of "neuroaesthetics," in *The Neurology of Kinetic Art* by Semir Zeki and Malcom Lamb.⁵⁰ In general terms, such studies point out that perception is not about receiving stimuli but rebuilding them. Our brain re-elaborates and interprets signals from cognitive schemes and internal representations. Perception is influenced and transformed by a complex series of processes, showing that perceiving is an act of imagination. The history of images is also a history of the body understood as a place for images as well as a medium for them.⁵¹ Gallese says current studies demonstrate that "seeing" is not about recognizing in our brain what we see with our eyes; it is "the result of a complex construction whose outcome is the result of the fundamental contribution of our body with its motor

potentialities, our senses and emotions, our imagination, and our memories.”⁵² Thinking of the virtual cave as a *Denkraum* means reflecting on immersive experience as a methodology for inquiring into these characteristics and motivating users to think of their processes at the same time. Since vision has a haptic quality, “our eyes are not just optical instruments, but are also a ‘hand’ touching and exploring the visible, turning it into something seen by someone.”⁵³ So we wonder how the immersion of our body in this environment can be a way of actively exploring this feature of the images from their insides. Interaction with the new digital apparatus goes beyond technical novelty, since it is linked to tactile contact with the images through the screen. The image we look at for the first time becomes the translation of an intentional motor act, such as when we enlarge an image on a screen with a gesture of our hands. The screen allows us to explore a new relationship between image and movement.⁵⁴ The virtual cave as a virtual *Denkraum* is proposed as a project that starts by affirming that the experience of images is inseparable from the sensory-motor and affective experience of reality, and that new image technologies offer new possibilities for understanding how images mediate experience. Mark Hansen points out precisely how the introduction of these technologies displaces the language of their traditional dominant role as a vector of human experience, by placing a non-linguistic but corporeal visuality at the center of our experience.⁵⁵

Conclusions

All the questions we pose lead us to a fundamental interest in the moment in which an image becomes so, along with asking ourselves what images are, when they come into being, and why. This need to “confront pictures” reveals that we are not so different to our Paleolithic ancestors, perhaps not from the idea of a “period eye” (Michael Baxandall), but from the view of

humans developing ways to relate to pictures. Immersive technologies might be a way to experiment with this “confrontation” and reflect on the specificity of a visual and sensory dimension, as well as its role in the birth of the image. If these new theoretical perspectives of modern visual culture were applied to the interpretation of parietal graphism, we would find new approaches to the quest for the image from an anthropological theory that could help us understand the history of the image, its techniques and media, and essentially its relation to the body. We would not try to find a complete image anymore, an exclusive image, in the terms of Didi-Huberman.

The *Cueva de las Manos* project explores all of these possibilities from an expanded visual anthropology that associates different image media, and by doing this tries to create an experience that allows the user to reflect on the pictures inside the cave, by confronting the observer and the pictures around them. It also explores the possibilities that immersive technologies offer, in order to spread and develop investigation about archaeological heritage, taking into account at all times the specificity of the immersive medium. These technologies set new forms of expression and research in the study of the image, and also provide us with methodological and expressive strategies to preserve and protect regional archaeological heritage.

- 1 The original term in Spanish is *grafismo parietal*, intended to take the place of the traditional view that refers to these pictures as “cave art.” This idea will be developed in depth in the article, in which the original sense of the term is respected in the English translation.
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- 14 Ulf Bertilsson, "From Folk Oddities and Remarkable Relics to Scientific Substratum: 135 Years of Changing Perceptions on the Rock Carvings in Tanum, Northern Bohuslän, Sweden," in: *Picturing the Bronze Age*, eds. Johan Ling, Peter Skoglund, and Ulf Bertilsson (Oxford: Oxbow Books, 2015).
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- 29 Severi, *El sendero y la voz*, 54. Translation by the authors.
- 30 Ibid.
- 31 Ibid.
- 32 Hans Belting, *Antropología de la imagen* (Buenos Aires: Katz Editores, 2007); Bredekamp, *Teoría del acto icónico*; Boehm, "¿Más allá del lenguaje?"
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- 45 Krois, "Enactivism and Embodiment in Picture Acts," 17.
- 46 Boehm, "¿Más allá del lenguaje?," 87. Translation by the authors.
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