

The Great Murals of the Sierra de San Francisco Stone Memory of a Missing People

Introduction

The peninsula of Baja California is a region of Mexico that concentrates one of the most extraordinary repertoires of rock art in the country. Its condition, almost insular, kept the native people relatively isolated from continental influences, allowing the development of local cultural complex. In particular, one of the most significant features of the peninsular prehistory is that these people promoted here the mass production of rock art since ancient times.

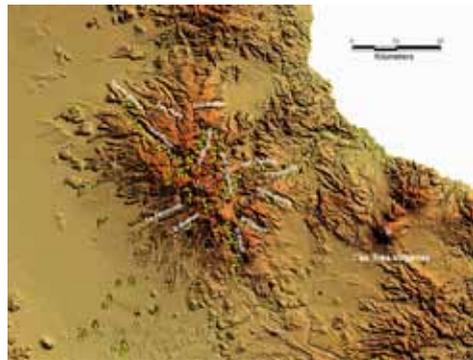
Very often, the rock art imagery tinged the peninsular landscapes and its abundance and complexity is sometimes overwhelming. In certain areas it is omnipresent, marks, signs, integrates to the landscape with remarkable

persistence and gives it a cultural meaning clearly showing the fluid movement of the people who created it, witnesses and protagonists of departure and return (Conkey 1984:264-267; Gutiérrez y Hyland 2002: 30). Painted and engraved imagery is perhaps the most obvious value belonging to the region, but it assumes an external or parallel importance to its iconographic senses, integrating a key element in shaping the landscape and becoming an important development that extends the field of meaning beyond the panel and the place to consider the broader context of social geography. In this sense, one of the main values of this region is the landscape itself, understood as the extensive physical space

Figure 1. The central mountain ranges of the peninsula of Baja California. The yellow triangles indicate rock art sites.



Figure 2. The main streams of the Sierra de San Francisco. Great Mural sites are located in numerous caves and rock shelters that open their mouths on the slopes of these canyons and ravines.



in which, through rock art, thoughts of their early dwellers were fixed, people who lived here from the terminal Pleistocene (10,000 years BP) until the arrival of Jesuit missionaries in the late seventeenth century.

So far, the peninsular central mountain ranges are the ones that displayed more profusion and diversity of images. Besides, these mountains were the scenery of one extraordinary prehistoric event: the development of rock art tradition of the Great Murals (Crosby, 1997). Range of this tradition includes the Sierras of San Borja, San Juan, San Francisco and Guadalupe. Nowadays, the most investigated sierras are San Francisco and Guadalupe, in which almost 1,150 rock art sites have been registered, including painted sites, engravings sites, mixed and geoglyphs (Gutiérrez 2003; Gutiérrez y Hyland, 2002; (Figure 1).

Archaeological research developed around the rock paintings of Sierra de San Francisco, allows us to consider this rock art as a segment of material culture, a distinctive legitimized feature, which represents the symbolic use of certain elements from reality. The imagery shows us how indigenous societies perceived the phenomena that took place in their world and how they controlled, ordered and represented it (Hernando 2002:51). Therefore, the iconography expressed in rock art produced in their creators acts of recognition and feelings of belonging and can be considered as a symbolic capital (Bourdieu 2007:109-110), which was relevant to the visual construction processes of social identities of these small-scale societies, who were also able to create sophisticated symbolic systems, which largely reflect their worldview.

The Sierra de San Francisco

Of the central mountain ranges, the Sierra de San Francisco is the one that concentrates the most spectacular and best-preserved Great Mural sites, Inscription in the World Heritage List was based on these exceptional rock paintings¹. It is a small volcanic mountain range located in the northern extreme of Baja California Sur, México. It has high *mesas* sectioned by deep canyons that extend in a radial pattern. The *sierra* reaches a maximum altitude of 1590 m. over the sea level and has an approximate

area of 3600 km². Their western slopes descend to the vast plains of the Vizcaino Desert and the Pacific lagoon systems; to the east, the mountains meet abruptly with the Gulf of California. Its climate is generally dry and warm, receiving an average less than 100 mm. of precipitation per year. Therefore, surface water sources are scarce, still confined to very few perennial streams and natural cavities (*tinajas*) Its main streams and their tributaries are rich in caves and rock shelters where the rock paintings were embodied (Figure 2). In terms of vegetation, in the mountains occur some of the most amazing communities of the Sonoran Desert, while relatively dense riparian habitats can be found along the better irrigated streams (Figure 3).

Although it is considered as one of the more marginal environments of the earth, there were here the optimal conditions for the development of hunter-gatherers-fishers groups. Using the wide variety of coastal, plains and mountain environments, the natives followed an intense pattern of mobility in search of food, raw materials and water. Because of this pattern, archaeological sites are many and varied. The rock shelters with rock paintings are the best known, though petroglyphs also have a wide distribution

Harry Crosby coined the term Great Mural in the Seventies taking into account an outstanding characteristic from some of these manifestations: its great size. Significant variables have been detected here within what Crosby defines as the Substyles of this monumental rock painting tradition, these are: Red-on-Granite, San Francisco, San Borjitas, La Trinidad and Southern Semi-abstract Sub styles (Crosby, 1997:210-217) (Figure 4) besides, new regional variants have been identified. Many of these sites have panels with hundreds of figures, some of which were shaped in extremely high parts of the rock shelters, accentuating still more their greatness. Frequently the paintings are profusely overlapping and arrows or spears pierce sometimes animals and humans. The anthropomorphic figures can or cannot wear headdresses, and there is an ample range of these, some very common throughout the region and others are exclusive of certain sectors. Despite the prevailing realism, there are examples of ab-

Figure 3. Aspects presented by the vegetation in the plateaus and canyons of the Sierra de San Francisco. A. Petroglyphs in the Mesa de San Pedro; B. Santa Teresa Canyon, Arroyo de San Pablo.



Figure 4. (below) Great Mural Substyles. A. San Francisco; B. San Borjitas; C. La Trinidad; D. Southern semi-abstract

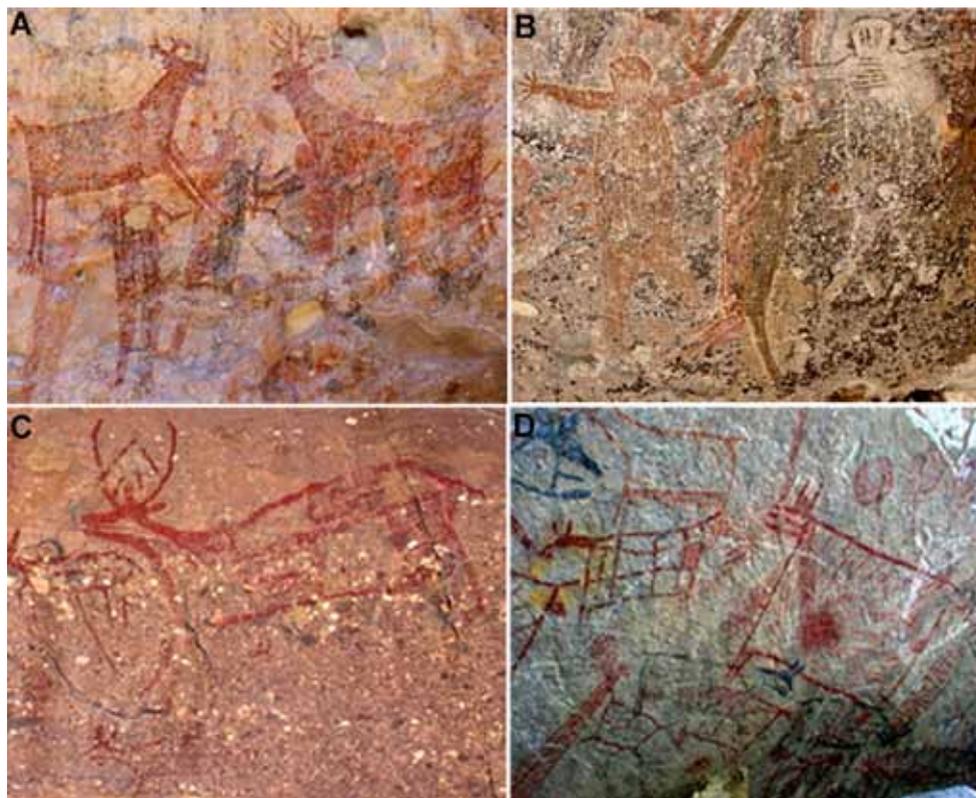


Figure 5. San Francisco substyle distribution. Campo Monte site belongs to Red-on granite substyle, the northernmost of the Great Mural Tradition.

stract figures that were painted in sectors of some typical monumental panels.

The Sierra de San Francisco Substyle

The San Francisco Substyle is the more homogeneous of the Great Mural tradition. It covers a large geographical area focused in the Sierra de San Francisco, extending northward into the Sierra de San Juan and south into Sierra de Guadalupe northern sector (Figure 5). Currently about 350 Great Mural sites are known in this mountain range.

In the mountains, rock shelters are located along the vertical margins of the canyons where the wind and rain erosion has excavated shallow hollows (Figure 6). The size of these rock shelters may be impressive, for example, the Cueva Pintada in the Arroyo de San Pablo, runs along the canyon wall about 175 m (Figure 7). While in the Sierra de San Francisco there is a clear correlation between the large rock shelters with archaeological deposits and Great Mural imagery, many panels, some

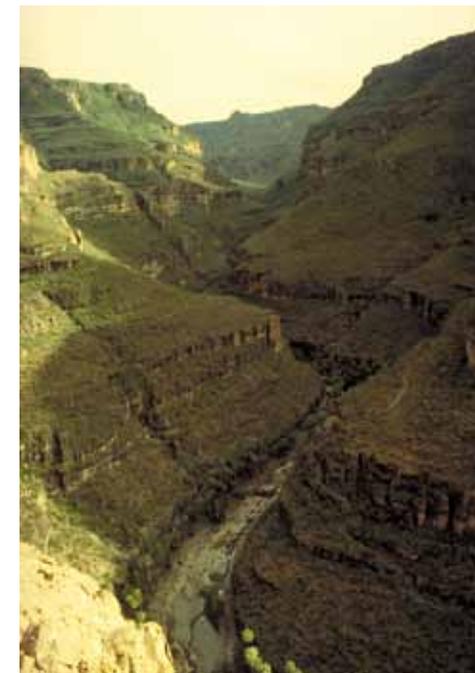


Figure 6. Panoramic view of the Canyon of Santa Teresa in the Arroyo de San Pablo.

of them exceptional, are presented in small shelters or along ledges or backs that exhibit little or no association with archaeological materials. The Great Mural emblematic sites are located along the main streams that have water throughout the year.

The San Francisco substyle is mainly realistic and is dominated by monochrome bichrome or polychrome human figures or animals painted mainly in red, black, white and yellow (Figure 8). The images are many times larger than the natural size, up to two meters high for humans and two to three meters in length for deer, bighorn sheep and pronghorn. Previously we noted that the monumentality of the imagery is accentuated by the frequent location of the paintings in very high ceilings and walls of rock shelters, which may have represented one of the most significant technological difficulties encountered in implementing the paintings. Some researchers have suggested that the brushes were mounted on long poles (Smith 1983) but also seem likely that some painters built scaffolding or used palm trees



Figure 7. Cueva Pintada, one of the most spectacular rock art places in the Great Mural area.

Figure 8. A panel sector in the eastern edge of Cueva Pintada

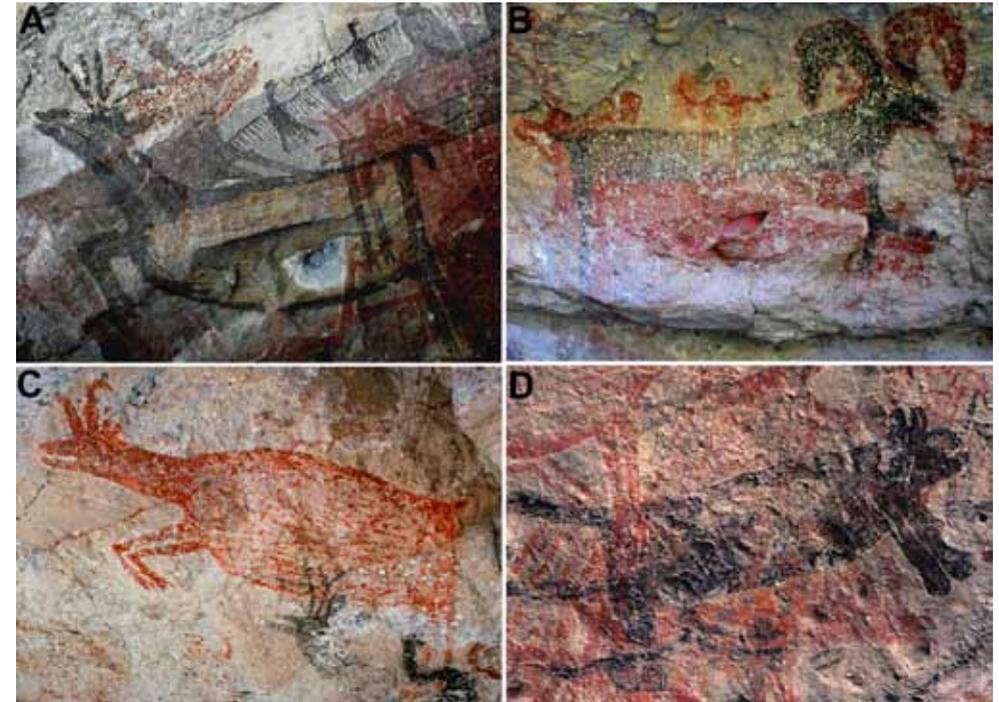


Figure 9. Some typical shapes of zoomorphous: A. Deer, Cueva Pintada B. Bighorn sheep, Cueva de las Flechas; C. Pronghorn, La Palma de San Gregorio; D. Puma, Cueva del Ratón.

logs leaning on the wall to achieve the desired elevation for painting. The scrutiny of some panels clearly shows the use of a device like a brush. The width and roughness of these marks seems to fit the local agave leaves, extremely rich in fiber so that these were probably used as brushes (Gutiérrez & Hyland 2002:85)

In general, the San Francisco substyle is static, particularly in anthropomorphic figures, but the attitude of some animals or their placement within that target sequences in the same direction suggests some movement. The human figures are designed facing front, with arms raised consistently. Almost there are no details of facial features or clothing. Another common element in this imagery is that human figures can be painted by one solid color or sometimes show vertical and horizontal two-color.

Arrows or spears pierce some human and animal figures. The painters often designed anthropomorphic figures, which can be identified as female, her breasts below the armpits,

a convention commonly found in Australia and other rock art areas.

Deer is the animal more often designed, followed by bighorn sheep. However, other animals were composed in the panels, including pronghorn, birds, rabbits, jackrabbit and various sea creatures like sea turtles, fish and rays. Mountain lions and coyotes are uncommon and snakes were rarely represented. In general, zoomorphic figures show the same chromatic pattern expressed in the anthropomorphic figures. (Figure 9)

While San Francisco substyle is primarily realistic, there are abstract designs in some monumental panels. Geometric designs, grids patterns, and checkerboards usually set them. It could be entopic forms, i.e. designs derived from "visions" experienced during altered states of consciousness-like trance (Lewis Williams & Dowson 1988; Whitley, 1994; Gutiérrez & Hyland, 2002). In addition, there are abstract petroglyphs in many Great Mural places, done on boulders within rock shelters. Some were



Figure 10. La Serpiente Cave, Arroyo de El Parral

made on the walls, sometimes superimposed over old layers of paint.

Though the Great Mural tradition deserves unreserved designation as monumental, it is important to emphasize that the range of measures of images and the height at which they were executed is very variable. Many figures that present the San Francisco stylistic attributes are miniature and are placed in accessible locations of some rock shelters or occur in the same places to coexist with the great figures.

Some panels suggested scenes like Cueva de La Serpiente and El Batequi (Figure 10); but, in many of them the overlaying of figures give us the overwhelming impression that important thing was the action of painting, (often in highly circumscribed and defined panels), and to establish relations of overlap figures, and not the creation of what we think may be a scene or narrative composition.

The compositional analysis of paint samples indicates that it was obtained from local mineral pigments: red and yellow from iron oxide, black from manganese oxide and white from gypsum. While these minerals are locally available in a variety of sources, large deposits of rich color and variety of hues iron oxide are

located in the Cañón del Azufre, within the Tres Vírgenes volcanic field (Figure 11) and it is very likely that these deposits had been the source of the raw material needed to prepare the paint that was used in Sierras de San Francisco and Guadalupe to make both the rock paintings as well as the body painting, a common practice among these societies. It is also possible that the gesso-white had been used to sketch images. The evidence indicates that the desired shape was first outlined and then covered with the other colors. The pigments were ground either in fixed mortars or metates (Gutierrez 2009; Gutierrez & Hyland 2002).

Chronology and Cultural Filiation

One of the key questions in the context of studies in this macro cultural region concerns the antiquity of the Great Murals. The absolute dating of these paintings is crucial for the investigation of how and why about this phenomenon and understanding its relationship with other diachronic factors such as the prehistoric demographic and climatic changes.

The first references to the Great Murals can be found in the records of eighteenth-century Jesuits (Barco 1973). The modern era



Figure 11. Two aspects of the Azufre Canyon in the Tres Vírgenes volcanic system. Large deposits of iron oxide with rich color and variety of hues are located in this canyon.

of research began in the late nineteenth century when in 1894 Leon Diguét, an industrial chemist working in the French copper mine El Boleo, Santa Rosalia, conducted explorations in the *sierras* of San Francisco and Guadalupe. He subsequently published descriptions of several of these sites (Diguét, 1895).

The Jesuits' impression who at some point visited the Great Mural sites was that the paintings were "old"². This impression is based not only on the assessment of the physical characteristics of the imagery, but more definitively, in the answers they got from their informants when asked about the paintings. Cochimíes local groups denied any knowledge about the imagery and its origins, attributing the work to an ancient and now extinct race of giants from the north³. Given the Jesuit policy of eradicating the native religion, the veracity of such responses is open to serious questioning. Putting aside the Jesuit subjective estimates about the condition of the Great Murals and the result of his interrogations, some researchers have suggested that the paintings should be considered relatively recent

(Meighan 1966:379, 1978:11; Grant 1974:115; Crosby 1984:180-183). This premise is based largely on the set of artifacts from the late prehistoric period related to culture Comondú commonly found on sites with paintings and a confirmed radiocarbon date, the first for a Great Mural site: AD 1435 ± 80 (Meighan 1966)⁴. Comondú materials from prehistoric and historical contexts have been associated with Cochimíes from the contact period and their immediate prehistoric history (Massey, 1966).

Before 2000, there were only six absolute AMS⁵ dates of three Great Mural panels of the Sierra de San Francisco, a much reduced number for a phenomenon that spans thousands of square kilometers (Fullola et.al 1994; Gutiérrez & Hyland 2002:337). Due to this, in the last decade one of the main objectives of the archaeological investigation developed in the region was to expand the known chronology for the Great Murals. At present, we know that AMS dating of rock paintings is subject of severe controversy, especially when the purity of the samples is questioned and the

origin of carbon from which the dates are obtained. Then, we ignored that over time this revolutionary dating technique would be seriously debated, so we continued addressing this aspect of research along all these years.

The investigation not only contemplated the possibility of obtaining direct AMS dates, but also characterizing the components of painting, putting a special emphasis in the identification of the binders that were used in the formula. Near 300 painting samples were collected between 2002 and 2003, from some of the most emblematic sites of the Great Mural substyles. 60 dates have been currently obtained. The most outstanding date was one got at Cueva San Borjitas, Sierra de Guadalupe, which disclosed an antiquity of 7.500 years A.P (Watchman et al 2002); these results are surprising because they surpass all the expectations by placing the production of this tradition at a so remote time. The analysis of these dates has not been finished yet. Its implications not only will modify the interpretations and discrepancies that occurred around the first dates (Fullola et al.1994; Gutiérrez & Hyland 2002; Magar et al. 2004; Murray et al. 2003), but will also generate valuable information about the production process, the use given to the images sets and to the places containing them, and the meaning its elaboration had for the ancient societies which generated it.

The Great Murals, Context and Function

How to recognize the motivations that dominated the thinking of the Great Mural creators? These panels show a complex stylistic and thematic diversity, which makes it very difficult to recognize in individual figures and sets of these, its "underlying conceptual structure" (Lewis Williams, 1983:6). However, the currently recognized variants and the diversity of the archaeological context in which they manifest themselves indicate that their origin was of a very wide range and the rock art places fulfilled various functions.

One of the most characteristic features of the Great Mural is the design of human figures or animals pierced with spears, darts or arrows. Since the modern stage start in the investigation of these paintings, the presence of this

attribute has led many researchers to suggest two functionalist and literal interpretations for the imagery: 1) that painters reproduced scenes of hunting or hunting magic (Diguët in Grant 1974, Grant 1974:107; Ritter 1974:16; Meighan 1966:390, 1969:68), and 2) they designed combat scenes or magic of war (Diguët in Grant 1974:27; Grant 1974:114; Ritter 1979: 395; Crosby 1984:99. Meigham (1966) suggests that the Great Mural phenomenon as hunting magic may have been stimulated by a possible reduction in the number of game due to an increase in aridity.

The hypothesis of the hunting magic as a viable model for the interpretation of rock art has been criticized and rejected with many ground elements (Lewis-Williams 1982:430; Whitley 1982) and as in other parts, there is not any information, neither in local ethno-history nor in ethnographic literature, and this hypothesis seems to weaken further by inherent patterns to imagery itself. On similar grounds the hypothesis of war magic has been criticized.

The last 20 years have been marked by the publication of a series of tasks that describe the Great Mural imagery "shamanic" orientation. This position is based on the relationship of certain elements found in some anthropomorphic figures characteristic of this tradition, with ethnohistorical descriptions that refer to the costumes of the peninsular ritual specialists and such topics as animal spirits attendants, wizards, visions, flight of the soul, xerianthropic transformation and trance. (Jones 1989; Smith 1983; Ritter 1994:22). While assertion that imagery is of a shamanic nature, it is difficult to contradict, "...the evidence marshalled for these proposals so far has not been compelling" (Laylander 1987:520). Analog links for these jobs is largely based on a mixture of general and specific sources including peninsular ethnohistoric and ethnographic information, information from the southwestern mainland United States and of course, of the ethnographic worldwide literature.

It has been proposed elsewhere contextualizing Great Mural imagery, including shamanic associations, based on the consideration of religious concepts and peninsular ritual practices. Archaeological research carried out in this mountain range allows us to point out



Figure 12. Some headdresses types those are present in the human figures of the Sierra de San Francisco. Those in the upper and middle rows are the most common; those placed on the lower row are unique.

that the practice of painting and engraving was a long-term phenomenon of essential importance in the indigenous worldview European missionaries and chroniclers described a few ritual practices and artifacts that were used in them. Some of these devices have been recognized in rock art panels, but also found in archaeological excavations or described in the ethnography of the northern tip of the peninsula, made during the first half of the twentieth century (Gutiérrez & Hyland 2002; Ochoa-Zazueta 1978). This speaks of the relevance of these paintings and their roots in ritual practices of these complex small-scale societies

We know that the veneration of ancestors and the dead formed the core of the peninsular ideology around which a set of ritual practices was developed. The communication with the ancestors led these practices through the death personification and spirit possession in a state of trance⁶. Capes of human hair, ceremonial tables, wooden figures carved and painted and feathered sticks, unique artifacts of material culture of the peninsula, were the objects of ritual paraphernalia and served as

surrogate images of mythological heroes and remote ancestors (Gutiérrez & Hyland, 2002)

Thus we can argue that the importance and intensity of image processing in the peninsula for the representation of dead ancestors is the key to understanding the meaning and the role played by some of the Great Mural sites, let's say those places characterized by containing the most emblematic rock panels of this tradition. These sites are characterized by their large size and because in their panels the human figures are predominant, some of which carry a wide range of headdresses, some of which wear an interesting variety of color patterns on bodies and faces (Figure 12). Detailed analysis shows that certain figures were repainted over and over, possibly all along centuries. What prompted this "renewal" or "reactivation" of images? Although much remains to be investigated, a hypothetical proposal is that both the places chosen as the personages and animals that make their painting panels had a richly symbolic load, concentrating and containing the collective memory of these groups. In these terms, human figures represented founding ancestors of lineages and/or mythical deities



Figure 13. Checkerboard located in a secluded and semi-occult sector of Cueva de La Soledad or Pajaro Negro, in the Sierra de San Francisco.

and through ritual refinishing, people revered them, while at the same time were reaffirming their individual and group identities.

However, not all sites are in this category and there is a range of panels to explore that exhibit quite different topics. For example, there are panels that contrary to those described above, are dominated by animal figures, especially deer and bighorn sheep, which sometimes give the idea of a “walking” group. Other panels show a balance of zoomorphic and anthropomorphic figures but denote that there was a strong intention to link with each other, layer upon layer, resulting in the creation of confusing compositions in which the figures overlap extensively, making difficult the recognition of individual motifs. It has been found elsewhere that the most visible part of some panels presents common scenes, but in secluded and hidden sectors, abstract-geometric figures were painted (Figure 13). As we note before, it has been argued that some of these ambiguous figures may be the result of the *guama*'s visions⁷, the ritual specialist that through trance had access to the place of the dead, where he could communicate with

the ancestors and deities. There are also huge caves and rock shelters with ceilings and walls that could be ideal as canvas, however many of them do not show any paintings or show a few painted motifs.

Some very interesting sites are those dominated by male or female figures presenting certain related motifs, which may be related to gender symbols. It is hypothetically proposed that these are sites for men and women's sites, but we do not know if they were exclusive or not; probably at these sites ceremonies related to fertility and rites of passage for adolescent girls with their first menstruation and the boys' recognition as hunters took place; it is also possible that at these sites male and female adolescents were sexually initiated. In the Sierra de Guadalupe there are numerous panels displaying pairs of men and women with genital highlights and positions, especially women, which could be related to sexual interaction. So far, the only example of a pre-mating scene is located in the northwestern sector of the Sierra de Guadalupe. This is a spectacular Great Mural panel: the female figure, shown larger than the male and the prominent headdress she

wears, reveals the high rank of the character. The axis of this composition is vertical, i.e., the woman was painted on top with legs and arms outstretched, while the man was designed in the bottom of the shaft, inverted, with legs spread and highlighted genitals. It seems that the painters pre-designed the scene for the vulva exactly on a bulge on the wall, which emphasizes and highlights the anatomical part (Figure 14) (Gutiérrez, 2007).

Functions of the paintings and sites that contain them may have been many, however we must be careful not to get carried away with simplistic interpretations. This symbolic system that has both metonymic and metaphorical elements, was built on completely different parameters to ours (Hernando, 2002); the ancestral thinking that produced this imagery is at the opposite pole of the mental processes that govern our way of experience the world. It will be impossible to discover and describe the “otherness” in neutral terms, as we will always be influenced by the references that have affected and defined our perception of reality and the construction of our own identity. Actually, this is one of the main difficulties faced when trying to access the individual and social processes that constructed these identities from the past and expressed, in this case, through rock art, people missing nowadays.

However, what we can say from a general perspective is that the role played by the Great Murals as a codified system of visual communication, was very successful. Its consistency, wide spread and permanence of certain symbolic forms tells us about the great skill that its artificers had in the construction and consolidation of this symbolic system and society's ability to decode its meaning in one or more levels over large areas of local and regional identities.

Cultural Heritage Management

Background

The process of evangelization in the peninsula began in the late seventeenth century and caused the total disappearance of the ancient inhabitants of these lands, peoples Cochimies, artificers and heirs of the cultural practice of

painting and engraving. The present inhabitants of the Sierra de San Francisco are descendants from Hispanic missionary employees who settled in San Ignacio for over 150 years, or managers and miners of the French company El Boleo, which extracted copper from the region since the late nineteenth century. For years, these populations were almost completely isolated within the mountains.

Before 1970, the highlanders lived from farming and cattle and goat cheese production, population density was low and in general the area lacked of roads. These conditions allowed the landscape and archaeological sites to remain in balance and so, for years, only residents of the mountains had knowledge of the existence of these monumental paintings. However, following the expeditions of Erle Stanley Gardner (1962) and Harry Crosby (1997) and the disclosure that is made of the same the situation turned around, the number of visitors to the sierra increased considerably, creating a patchwork of problems.

The tourists began to hire guides among the inhabitants and rent necessary beasts of burden and riding mounts for the expeditions. This created an alternative source of income, but certainly was a factor that triggered several transformations in the idiosyncrasy of these people. In 1990 the inhabitants of the mountain did not exceed the 250, by 2010 the population doubled, and this tells us about the

Figure 14. In this pre-mating scene, the woman was painted on top, while the man was designed inverted in the bottom of the shaft; the woman's vulva is exactly on a protuberance on the wall, which emphasizes this anatomical part.



changes experienced by the region following the opening of roads and the introduction of new ideas.

Santa Martha and San Francisco de la Sierra

Before 1984, tourism that year after year visited these mountains entered by the only dirt road that existed then: the one leading to the valley of Santa Marta, located in the southern foothills of the Sierra de San Francisco. From here, the expeditioners hired guides and rented mules and donkeys of burden that allowed them to reach the canyons where the rock paintings are concentrated. However, in 1984, the construction of the dirt road leading to the San Francisco de la Sierra village, sparked a dramatic change: little by little, tourism chose the new road to facilitate access to the northern streams, where sites and spectacular scenery are located. Previously, these sites required achieving long hours riding on a mule; with the way, the times were considerably reduced but the transformation of communities and the environment worsened. A further aspect that makes this road a very attractive way, is that it gradually rises to the highest parts of the mountain, which allows visitors to see interesting views of the desert plains of the Vizcaino Desert, the lake systems of the Pacific Ocean, La Ascension and San Pablo canyons and the Sierra de Santa Clara, whose solitary peaks rising to the east, almost bordering the Pacific Ocean.

The new situation created the San Francisco de la Sierra people experienced a peak in their activities as providers of tourist services and a specialty in the guide-carrier trade, while those of Santa Marta, suffered a decline in job opportunities even though they were the pioneers in this business and had the leadership for years. Currently, the vast majority of these guide-carriers face a labor shortage and lack of incentives to improve their work as guides.

Due to the increase of visitors and the lack of control, some rock art sites were targets for the looting of archaeological artefacts recovered from the surface, or through informal excavations. Some rock paintings were damaged, but fortunately just a little. Visitor's activities were diversified, transgressing

the established law, when rock art began to be subject of archaeological research in the absence of knowledge and control from the authorities of the National Institute of Anthropology and History (INAH). In December 1993, the rock paintings of the Sierra de San Francisco were inscribed on the UNESCO World Heritage List, placing it in the center of international concern.

Implementation of Management Plan

The administration of this cultural heritage has been a fundamental aspect over the years. The strategy was forged in a gradual way and parallel to archaeological research; it was consolidated in 1994 with the crystallization and implementation of Management Plan of the Sierra de San Francisco. That year two research projects coincided in the region related to rock art of the Sierra, one archaeological (Gutiérrez & Hyland, 2002) and the other about conservation (Stanley 1996)⁸. At that time the conditions were optimal for generating a protection strategy under the new circumstances, various organizations interested in the preservation of rock art agreed on the need to unify criteria and establish a regulatory framework: the Getty Conservation Institute, the Friends of Baja California Sur (AMISUD) and INAH joined forces with the aim of designing and implementing the Management Plan. The adapted model for the design of this plan comes from The Burra Charter of Australia ICOMOS (1992)⁹ and emphasizes the importance of defining, in the first instance, the significance of this heritage site, so that all policy and management strategies are consistently directed toward the preservation of the values that make it important. Another key feature is the total involvement of all those groups who have an interest in the area under discussion. Note that this participation in the planning process was unprecedented locally.

Assessment of meaning of the Sierra de San Francisco

The main value recognized in the Sierra de San Francisco is its exceptional rock art, but for the cultural meaning of this expression to be

preserved, there are other values that need to be conserved. Its historical values include prehistoric sites, but also the evidence remains of the mission period and the survival of cultural traditions from the mountain whose roots reach back to eighteenth-century historical events. There are very strong aesthetic values, not just in its spectacular rock art, but also in the beauty of the landscape and vegetation of the canyons and plateaus. The scientific values fall within the scope of the investigation of its biodiversity and high degree of endemism of species of flora and fauna as well as in the study and conservation of rock art sites. Finally, the Sierra has a strong social value in the role that culture plays in the preservation of the traditional links between mountain communities and the Sudcalifornianos and Mexicans in general, to contribute to the assessment of the true history of Baja California from prehistory through the mission period to the present. The "mystery" of the origin of the paintings has for a long time been an important symbolic value, this is now diminished due to the advancement of archaeological research, however, for many, it will remain as a lasting value. (Gutiérrez et al 1996)

As we pointed out previously, the general policy for the management of these resources, emphasizes the definition and preservation of those values which together give meaning to the Sierra, while at the same time the preservation becomes a source of profit. The development of the region must be sustainable and compatible with the preservation of their educational, historical and environmental values, thus allowing to be used and enjoyed by present and future generations (ibid)

The main threats

It should be recognized that the main danger is the pressure that tourism has on the Great Mural sites. In this regard, we need to say that the distribution pattern, density, and diversity of prehistoric sites in this region, face us an a highly exposed archaeological zone. The sites are everywhere, many of them along paths that continue to access ranches and canyons. In addition to the vulnerability of the rock art panels, the archaeological deposits at these locations suffer serious deterioration if

many people walk on them. Therefore, the Management Plan focuses on the following issues: 1) mitigate the impact of visitors on sites and their environment, 2) control and monitor access.

Mitigating the impact of visitors

Since the sixties, tourism to the Sierra *de facto* established a regular circuit to better-known Great Mural sites. One of the immediate priorities was to provide direct protection measures at these sites, in order to reduce their rate of deterioration. These measures included the installation of walkways, railings, fences, access trails and informational signs in six of the Great Mural most visited sites. In 2005, another site was enabled: Cuesta Palmarito¹⁰, the most popular in the south of the Sierra. (Figura 15)

Policies for visitors' access

One of the main problems facing the area was the uncontrolled access to sites, with or without guides, with the consequent exploitation of the sites from different perspectives. The lump sum annual visitors to the Sierra had been traditionally low, but with the World Heritage designation the number had risen substantially. If continued unrestricted access it was to be feared that some of the rarely visited sites, very important for the integrity of archaeological deposits, would come under increasing pressure.

The administration of an archaeological zone as the present one, with hundreds of archaeological sites scattered across thousands of square kilometers, required a strategy design *sui generis*. Some concepts and general guidelines were presented as a preliminary proposal and approved by consensus, these are: the authorized paths, the areas open or restricted to the public and different levels of access.

Levels of Visit

Visits to the Sierra were classified into four levels. Level I includes those places easily accessible by car and limited walking. Level II consists of selected sites within the San Pablo Canyon and Arroyo del Parral that are ac-



Figure 15. Cuesta Palmarito's walkway sector; in the background you can see a part of the rock painting panel

cessible by mule or extensive walking from Santa Marta and San Francisco de la Sierra towns and require camping. Camping is allowed only in designated sites. In order to avoid environmental degradation of camping areas in the streams and to prevent saturation of the Great Mural sites, maximum numbers of visitors have been defined to sites and to the camps. Level III consists of other sites that are less frequented areas such as the Arroyo de San Gregorio, San Gregorito and El Batequi, which can be visited only with a license that has to be requested two weeks in advance; a custodian of the INAH accompanies the groups. Level IV is designed for research purposes and permission is granted only to accredited researchers who are authorized by the INAH and the authorities of the Biosphere Reserve El Vizcaino. (Figure 16)

This system allows visitors to experience a wide range of sites and at the same time protects the majority of those who are very

well preserved. In this sense, the most popular sites have remained open under this Plan.

Surveillance

Monitoring involves checking the conditions of the sites and their environment, and the implementation of regulations concerning visitors and guides. The active participation of local people is also a fundamental requirement for success in the conservation of the rock paintings. Adequate protection of the sites depends on the guides who accompany visitors, two guide coordinators and three custodians of INAH residents in the mountains, which deal with the surveillance of three sectors of the Sierra: North, Central and South.

A crucial aspect was the establishment of an Information Module INAH at San Ignacio, and the permanent institutional presence in the region through it, while playing the dual role for the public to be an Interpretation

Center and a Reservations Center and guidance for visiting the Sierra. Tourists wishing to enter the rock art area have to document their visit in this module.

Conclusions

When the Indian population was disrupted and eventually eliminated of the central sierras, the rock art sites remained intact until the late nineteenth century, a period in which these mountains were repopulated. However, the integrity of rock art sites and their surroundings have maintained a high percentage of primordial conditions over the years, largely due to the conditions of isolation and low population density prevailing in the region. The extreme vulnerability of the rock art and the inherent difficulties in their study, being this one of the archaeological materials more difficult to understand and preserve, for the foregoing, it is the duty of everyone to try to preserve them for future generations. If we do not share this thought, we are condemning the disappearance of this extraordinary cultural legacy, as happened with the Indians who created it for millennia.

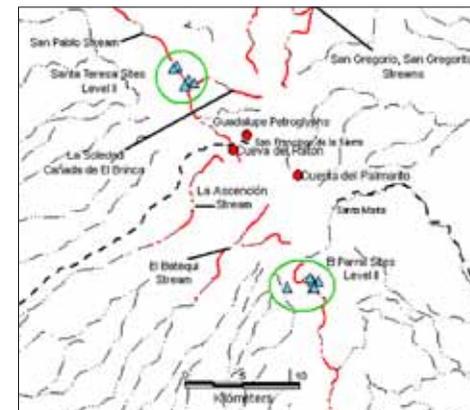
What have been the strengths of the management plan 17 years after its implementation? The management model has proven to be an effective strategy that has contributed to the conservation of historical, aesthetic, sci-

entific and symbolic values of the region. The landscape, archaeological and historical sites, petroglyphs and rock paintings have been stable. Archaeological research is regulated and there has not been looting of archaeological items as before.

What were the weaknesses? The Management Plan has been ineffective to assist in the preservation of social values in the region; due to lack of space, it is not possible to go into detail on how the whole process has been, but it must be said that there is a gradual loss of traditions and cultural identity of the communities of the *sierras*. While the number of visitors to the mountain has remained relatively stable (2000 per year), the number of guides has doubled, thus reducing job opportunities and these communities have faced each other. Finally, it should be noted that the Management Plan lacks a legal framework to provide support and strength and it is clear that it is weak against the impending onslaught of "development and modernity".

What lessons have we learned over the years? During the process of designing and implementing the Management Plan we knew the importance of balancing interests, making decisions by consensus and, above all, to involve representatives of all entities that time were related to the mountains. However, we did not anticipate that over the years the political and social environments, the persons and the interests change. To cite some examples: a) when the Management Plan was formalized and signed, constitutional reforms had not been approved which gave rise to the alienation of *ejido* land¹¹ becoming the *ejidatarios* of Baja California Sur, large landowners; the best lands are now passing into the hands of businessmen and politicians; b) the main constraint to establish large populations and tourism development in the region was the scarcity of freshwater; desalination plants are now producing high quality drinking water, this has raised land prices throughout the region; c) the state government of Baja California Sur democratic party changed, and the management style was transformed which involves excessive populism as the main feature of the new administration. All this has affected people, their interests and expectations, which are leading to the irreversible transformation

Figure 16. Visits to the Sierra were classified into four levels, allow visitors to experience a wide range of sites. In this sense, the most popular sites have remained open under this Plan.



of *serrano* culture, one of the most important values that were unique to the Sierra de San Francisco and even the region. This is a great lesson: when there are marginalized population centers in "protected areas", it is very difficult to keep the scenarios that generated the model of administration. Keeping the clamor for the "development" under control and the political use of heritage is an arduous job and sometimes nearly impossible to succeed.

The abundance of rock art sites located in the central mountains of the peninsula of Baja California, the vast expanse where they are scattered and limited human and financial resources, place us as managers of an archeological mega zone that is hard to protect. Experience shows that without the help of local people and without the understanding and support of the three sectors of government, any attempt to preserve cultural and natural values of this region will fail. It is therefore essential that the public and private sectors join efforts to reach agreements to establish lasting ties of friendship and strategic alliances with mountain communities that have lived for generations with this heritage, and have been the first line of defense we have.

However some setbacks, we will continue emphasizing both the importance of preserving this magnificent rock art as the supreme importance of interdisciplinary research to achieve its proper management. We must remember that the heritage acquires a social value from the time a group of people recognize it as such and it is important to their identity, and that's when archeology goes beyond the communities that coexist with this heritage, not only because it provides elements for giving cohesion as a society, but also because it can contribute to its sustainable development.

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Notes

¹ The inscription to the list of Mundial Patrimony of UNESCO took place in December 1993 under criteria (i) and (iii)

² The reports of the Jesuit Joseph Mariano and Francisco Escalante are in Barco (1988:221-212)

³ The myths tell that gigantic beings were widely reported in Baja California (Barco 1988:209-213) and coincide with the European legends of the Amazons of California. Interestingly, the Seri, in Sonora, across the Gulf also had myths about giants and had the habit of attributing Seri archaeological sites and even recent cultural attributes to an ancient race of giants (Bowen, 1976:103-107)

⁴ The date was obtained from a piece of wood found in Cueva Pintada, Sierra de San Francisco.

⁵ Acceleration Mass Spectrometry radiocarbon dating

⁶ The trance may have been induced by intoxication with tobacco coyote or by other methods such as repetitive chants, dance strenuous, fasting, self-sacrifice, hyperventilation, etc.

⁷ In Cochimi language, this was the name given to sorcerers and medicine men

⁸ Rock Art Project of Baja California Sur (INAH, National Archaeological Fund. 1993-1994) and Conservation of Rock Art in Baja California, Mexico (The Getty Conservation Institute. 1994-1995).

⁹ See also Pearson and Sullivan (1995)

¹⁰ Enabling Cuesta Palmarito was made possible through funding provided by the National Council Adopt an Art Work A.C.

¹¹ Certification Program of Ejido Rights (PROCEDE)

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