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**KEY WORDS:** Archaeology, Virtual Reality, Recording

## ABSTRACT

The archaeological documentation issues presented in this paper are at the heart of problem-solving endeavours that my Rock-Art Science Task Group and I, part of an international scientific network of networks called RecorDIM (see the infos given on the Getty Conservation Institute web site) whose participants cope with various aspects of documentation in heritage studies, are working on.

## 1. INTRODUCTION

Rock-art sites are among the most intriguing testimonies of ancient civilizations around the world. Thanks to their rich graphic contents, their aesthetic qualities or their historical and cultural values, some of them have become part of national heritage and, therefore, have been used for attracting tourism. Sites such as Lascaux in France, Bohuslen in Sweden, Drakensberg in South Africa, Nourlandjie in Australia or Peterborough in Canada (to name a few) are now well known to the public in general because of important means that national or regional governments have put forward so as to make them accessible. However in many cases, the public access to such archaeological sites has raised several problems of conservation which have endangered the integrity of those sites and forced authorities to take serious action to counteract these pernicious effects, although sometimes with inadequate results. Alternatively, with the development of new techniques for recording the visual contents of rock-art sites, it has become possible to create facsimiles or even to use computerized 3-D programmes for allowing visitors to have a virtual access to this endangered heritage. The following paper aims at discussing some specific issues regarding the feasibility of properly recording the integral part of a unique petroglyph (or rock-engraving) site located in the harsh environment of the Canadian Great North so as to facilitate its real or virtual access. More specifically, the eastern regions of Canadian Arctic are a good example where rock art sites offer an enormous potential for touristic activities, in particular as possible ethno- and scientific attractions, and whose exploitation might have significant economical repercussions for the local Inuit communities of what is called *Nunavik*, the Quebec part of Canadian Arctic. However, since these particular cultural resources have been judged endangered, one of the Inuit communities living in their vicinity, that is Kangirsujaq, has taken over from 1996 the responsibility of imposing measures for safeguarding their integrity and ensuring their long-term preservation. It is in this context that a collaborative multidisciplinary research programme has been set up, with the scientific support of researchers from Avataq Cultural Institute, an Inuit-owned organization, and the University of Quebec in Montreal. This on-going research programme aims at guaranteeing a shared responsible management, along with a scientific study of that rock-art phenomenon unique in the Canadian Arctic history. Among the main issues discussed within that programme is the possibility of rendering one of those sites, the so-called Qajartalik site, accessible to the public, and, in so doing, paving the way to its economic exploitation. This paper is two fold : first, it deals with some aspects related to the recording potential offered by that rock-art site with regards to the management practices and future exploitation to

be developed, and second, it discusses the issues our team are facing in the perspective of opening up that exceptional archaeological site both to local communities and to tourists visiting Nunavik.

## 2. LOCATION

The Northeast Coast of the Ungava Peninsula is a unique area within the Eastern Canadian Arctic where rock art sites can be seen. Nestled in the heart of the Kangirsujaq area, along the eastern coast of the Hudson Strait, five rock engraving sites are actually the only ones of the Canadian Great North known to the scientific community. Among them, the Qajartalik site — obviously offers the most important potential with regards to touristic development, but at the same time commands the biggest challenge in terms of conservation and management solutions to be applied in this context.

The rock-art site at *Qajartalik* — which means « where a kajak can be seen » in inuttitut, the language spoken by the Inuit people — is located more precisely near the eastern tip of a piece of land affixed to the north of Qikertaaluk, that is the « Great Island » in Whitley Bay. Standing at more than 15 metres above the mean sea level, and at about 50 metres from the shoreline, this archaeological site is a complex one : containing several rock formations of steatite (also called soapstone), it shows evidence of quarrying exploitation and visual symbolic expressions altogether. When taken as a whole, the site can be divided into four isolated sections, or activity areas, scattered along the longitudinal axis of an oval-shaped depression, part of a geological ridge, running northwest through southwest on approximately 130 metres. Section A, a small rock shelter with a man-made platform, represents the only part of the site which does not show any engraving nor quarried zones. At about 30 metres to the northwest is section B, the richest part of the site containing more than a hundred engravings of various sizes and shapes as well as multiples quarrying zones. Fifteen metres to the west is section C, where a huge flat outcrop has already yielded about 70 distinct engravings and a dozen quarrying zones. Finally, section D is located at about 80 meters to the north west of section C; it is characterised by a small erratic boulder, more than two meters long by one and a half meter width, and 1.6 meter from the base to the summit; only four petroglyphs can be seen on this boulder nowadays. Sections A and D form the two extremities of the longitudinal axis of the site.

### 3. BRIEF SUMMARY OF ITS RESEARCH HISTORY

Known for decades by many Inuit living in the vicinity of Kangirsujuq and more specifically by those who used to camp on Qikertaaluk Island, the site was first reported to the scientific community by the anthropologist Bernard Saladin d'Anglure in the early 1960's. Saladin d'Anglure carried on the initial analysis of what was going to be the first rock-art site ever discovered in the Canadian Arctic. This site was also unique for it was located within an important quarrying site exploited by the local community during the recent past. Incidentally although Saladin d'Anglure mentioned that that site had been quarried by modern Inuit sculptors in search of good-quality soapstone, he never really paid attention to the ancient quarrying zones, and therefore never stated that that site might have been also frequented by prehistoric quarrymen who used to make their oil-lamps and pots *in situ*, an archaeological insight that my team and I would however propose only about thirty years later. The anthropologist rather focused his attention mainly on the petroglyphs and their significance in the history of this archaeological site.

Thus, in his first two papers, published in 1962, Saladin d'Anglure reported having counted 44 engravings, all located on one rock outcrop only, the one located within what we call « sector B ». However, in 1965, during a second visit to the site, he found nearby a second decorated rock outcrop, which is part of the so-called sector C; on this outcrop, he discovered more than fifty new engravings, reaching therefore a total of 94 petroglyphs. The techniques used by Saladin d'Anglure for recording those engravings were on the one hand through photographic means, and, on the other, by casting some of the main figures depicted using latex to do so; indeed, this latter technique is nowadays strongly criticized by rock-art specialists for it can permanently alter the integrity of a rock-engraving and contaminate its inner parts rendering therefore its absolute dating more problematic.

Otherwise, Saladin d'Anglure pointed out that all these engravings depicted either human-like or animal-like faces, faces he also wrongly called « masks ». He also stated, as the late Canadian archaeologist William Taylor did not much later, that the sample of petroglyphs he had observed was related to the Dorset artistic tradition, basing his interpretation mainly upon the petroglyphs' great stylistic similarities with Dorset portable and mobiliary art. Incidentally, he and some other researchers, like Taylor and the art historian George Swinton, pointed out that those petroglyphs might have been part of an imagery proper to the shamanistic domain of the Dorset people. It is worth mentioning that the Dorset people was formed of small bands of hunter-gatherers and fishermen pursuing a nomadic way of life in the Eastern Arctic between the last centuries preceding the Christian Era and the 13th or 14th century A.D., replaced later by the direct ancestors for the Inuits, that is, the so-called Thule people.

After Saladin d'Anglure's fieldworks, there had been no further scientific work carried out on the site for a decade or so, except for a few visits done by two or three researchers with the purpose of taking pictures of the petroglyphs. Then in 1978, the Community of Kangirsujuq put an official stop to any further scientific enquiry on the site, after an archaeologist had removed, a year before, a block of stone from the steatite outcrop without obtaining prior permission to do so. Unfortunately over the following years, local people reported that groups of wealthy tourists had started to come aboard cruise-ships in the region, stopping at Qikertaaluk island for contemplating the petroglyphs of Qajartalik and their settings; those parties were even accompanied by professional archaeologists who taught them how to use papers and pencils

for rubbing as a technique of recording petroglyphs. However all these lay-peoples were unaware that, in proceeding this way and in stepping on and around the engraved outcrops, they were encouraging the weathering of the rock-art works.

Alarmed by that recurrent and harmful situation, the Community Council of Kangirsujuq decided to take action and asked, in 1995, Avataq Cultural Institute to set up a major archaeological research project which would help to better understand and protect the archaeological resources of Qajartalik. One of the main objectives of that project has been to carefully re-examine the rock outcrops, and to investigate the archaeological context in which they were found. The first two fieldseasons, undertaken in 1996 and 1997, were mainly oriented towards precisely locating every archaeological features still visible on the rock surfaces and surrounding ground, and evaluating their state of conservation. In addition to the careful recording, mapping and analysis of the site components, my team and I carried out in 1998 and 2001 the excavation of a two small portions of the main engraved formation in section B, an endeavour which allowed us to discover some lithic tools and other archaeological features of prime interest. Finally in 2003, as a way of better monitoring Qajartalik site, we proceeded with the installement of some measuring devices for evaluating the rates of rain and snow falls, the degree of humidity and pollution, and the sun-exposure of the rock-components so as to better determinate which conservation actions should be applied thereafter for a better preservation of the site's integrity.

### 4. THE ARCHAEOLOGICAL ANALYSIS

As mentioned earlier, only sections B, C, and D have yielded petroglyphs, all of them having been produced on the soft surface of several steatite outcrops scattered throughout the depression. Our investigations has allowed us to catalog over 170 different engravings of various sizes and shapes, depicting either human-like or, in a few cases, animal-like faces, all of them visible face on. A comparative analysis based both on the shapes and sizes of the engravings, and the techniques of producing them, reveals that different types of faces have been engraved on the site outcrops: round, oval-, rectangular-, shield-, teardrop- or pitcher-like shaped faces can be seen on various rock surfaces, some of them depicted with additional features such as pointing ears or strait lines protruding from under the chin. Some close-up views show that all these faces have been traced using different techniques, such as incising, scratching, grooving and pecking, or even percussion. And since these faces are depicted from a frontal perspective, the general visual effect produced by the petroglyphs on visitors is quite impressive for one is literally "face to face" with those figures, and sometimes surrounded by them, when walking on and around the rock outcrops, especially during a clear day when the sun is visible, creating an ever-changing lighting of the rock surfaces. In other words, under such conditions, many faces appear and disappear from sight over the day, living the visitors sometimes in awe before such a sudden presence of so many strange figures.

However, it is worth reminding here that the petroglyphs are not the only man-made features appearing on the rock outcrops since they are associated in many cases with small-scale quarrying zones. As a matter of fact, it appears that as a quarry, the site was extensively used for producing utility artifacts, such as oil-lamps and other containers, a practice apparently going back several centuries on this site. So far, more than a hundred small-scale quarrying-zones have been identified, many of them apparently made during the Dorset period, but

some others during the following centuries up to the historical period; also, forty-three of them have even been uncovered during the last excavation of 2001, revealing some new aspects about the techniques used for quarrying the rock-outcrop in the past. Along with these intriguing archaeological features, the site has yielded some preforms of containers which had been left unfinished on the rock surface, not totally quarried, whilst others were cut out with care so as to be carried away; however, this final stage was not always carried out with good results for our archaeological endeavour has led us to bring to light fragments of two Dorset containers abandoned on the site after they had been broken during the quarrying process. Finally, we have found on the site a few lithic-tools that had presumably been used for making either some containers or some petroglyphs, or even both.

## **5. THE CONSERVATION ASSESSMENT**

In addition to these archaeological activities at Qajartalik, my team and I have also focused our attention on a thorough assessment of the conservation state of the site components, so that a sound understanding of the weathering problems can be established. Although this part of our investigation is still to be completed by further analyses, its preliminary results already help us to constitute a useful basis for debating and planning conservation and protection measures.

At Qajartalik, the impact of different weathering processes have been observed on and around the rock outcrops. Some of these processes' effects are due to chemical or mechanical weathering factors which have been active for thousands of years, whereas others have been caused by human agents, mostly during the last fifty years or so. Indeed, many weathering problems depend also upon the nature and type of rock, its geological history and specific location as well as its structure and degree of porosity ; indeed, chemical and mechanical weathering processes will vary accordingly, although the latter processes can be much faster and therefore might represent a more serious threat to the remaining engravings and quarrying zones.

Among the chemical weathering problems one can note mineral dissolution reactions and swelling minerals (formation of gypsum, vermiculite) which are due to a frequent or constant exposure of rock formations to water : thus, wet climate, water seepage, shady location, and vegetation and soil that retain moisture are factors that consequently might increase chemical weathering. Indeed, water will find an easier access to a rock outcrop where fractures and exfoliations are present on the surface. At Qajartalik, a few ponds and water-holes have been noted on and around the steatite outcrops, caused by rainfalls and by thaw, but some of them appear to dry during the summer-season; however, vegetation and soils are present in many places and might maintain much longer the amount of humidity in their surroundings. Anyhow if these elements, alone or in combination, enhance the chemical weathering process of the site, neither them nor animal's acid excrements sometimes noted on the rock surface seem to have increased the weathering rates in the long term, especially when compared with some mechanical weatherings.

Thus, annual freeze-and-thaw cycles are considered one of the main causes of mechanical weathering on rock art sites located in cold environments. Important damages can occur where water freezes in cracks, fractures and other pores. On Qajartalik site, it is likely that repeated frost actions have caused the exfoliations of some decorated panels, but also the collapse of a huge block in section B which still shows several faces and small-scale quarrying zones on one of its sides, related to activities which occurred several centuries ago. Other

mechanical weatherings, such as the ones caused by roots and lichen-growth, can be noted here, but do not seem to pose a serious threat to the engravings and other archaeological features, despite the fact that, in many places on the rock surfaces, different species of lichen can partly or totally cover a petroglyph or a quarrying zone.

Finally, a third, but more recent, type of weathering problem has to be discussed here because it is closely related to the future management policies of rock-art sites in the Far North : that is, the human agency. It is not exaggerated to say that, more than any environmental pressure, human activities have been responsible for most of the deterioration of rock-art sites throughout the world. Looting, vandalism, ignorance, disfiguring measures and incoherent management procedures, as well as non-ethical or incompetent scientific activities have damaged, sometimes beyond repair, many rock-art works. At Qajartalik, there are several examples, such as graffiti, marks traced in order to enhance or « refresh » some old petroglyphs, but also material quarried for producing Inuit carvings or minute-samples taken by scientists in the name of archaeology, which clearly show that if no strict measure of protection is taken rapidly for controlling its access, the site's « pristine » state will be destroyed at a faster pace than one can imagine. This is why all these weathering problems have to be considered altogether with sociocultural issues (though I did not have time to discuss them today), and solutions found, when the question of rendering a site accessible is being discussed. But what can we do from now ?

## **6. TOWARDS THE RESPONSIBLE MANAGEMENT AND TOURISTIC EXPLOITATION OF THE SITE**

Following the problems briefly discussed earlier, it becomes clear, from an archaeological and conservation perspective and considering the actual state of scientific knowledge about Qajartalik, that it would be irresponsible to open up the site to the public hastily without applying the most effective measures for reconrding its components . Since this rock-art site, like the few others of this type located in this region, should be treated with a sense of respect, I argue that several measures of protection and conservation should be applied now in collaboration with local authorities, but without putting aside an open discussion about their commercial exploitation.

Indeed, one extreme stance might be to maintain these sites in their actual conditions, that is, non accessible to the public. But I am quite aware that that solution will not guarantee their perfect safety, especially when one considers the very limited resources available for watching permanently the wanderings of visitors in this remote region. Moreover, it is worth pointing out that there exists no total protection for rock-art sites in the world, whatever the measures taken to preserve them. For these reasons, and because this kind of archaeological resources could become a relevant and profitable mean to communicate meaningfully some aspects of the distant past and the rich heritage of Inuit communities, it is better to propose a more useful and responsible management agenda, especially with regards to Qajartalik site.

This is why I suggest to evaluate some responsible management practices and options, and see which one would be the best to adopt. At the same time, their implementation and maintenance should be not too expensive and remain realistic to apply in such a remote and isolated location.

In this management agenda, the first step would be to rapidly apply some strict measures of conservation which aim at slowing down or delay the most harmful weathering processes. Thus, as discussed earlier, several mechanical and chemical

weathering problems are due to water. It would therefore be logical to control its presence on the site through various means, although these should not create negative visual effects which would alter the « original pristine character », so to speak, of Qajartalik. To be efficient, one can think of various forms of drainage for emptying the ponds, the use of discreet silicon drip lines for filling in the fractures and cracks, the removal of soil, turf and vegetation on and around the rock outcrops; in other words, different means which could help to reduce the damageable effects caused by water seepage and frost wedging. Also it will become necessary to frequently remove from the rock surfaces the inorganic and organic debris. indeed all these maintenance actions should be carried out every year by local supervisors who will have had previously received a specific training.

In parallel with these actions, two scenarii are proposed for discussion with local authorities. The first one might be to maintain the site closed to the public until all the archaeological analyses have been completed and the main conservation and preservation measures have been applied, which means at least three other years of scientific endeavours.

Alternatively, a second option might be to render the site, or at least its immediate vicinity, soon accessible to a small number of tourists every year during the next three years during the brief summer season, and, at the same time, pursuing our investigations much further. Keeping tourists at a safe distance from the site, whilst giving them a chance of looking at its main components and observing our scientific activities, should be a good start for promoting this part of the Inuit heritage. Moreover, in doing so, it would become possible to evaluate how visitors could be « entertained » in situ, to better estimate the impact caused by such visits, and which means might be developed to control the site access more efficiently.

These scenarii do not mean that other devices should not be developed for promoting this kind of archaeological resources in Kangirsujuq and elsewhere. Thus, it is interesting to note

that an information centre has been recently built in that village where visitors are now receiving basic informations regarding the archaeological heritage proper to that region and some tips about the local rock-art phenomenon in particular. But it is obvious that the potential for Qajartalik is still to be exploited when one considers the various documentation means available. So it is now time to look for more fruitful devices to give a better overview of those exceptional archaeological resources located at Qajartalik. Indeed there are already a large quantity of visual data ( thousands of photographs, films) that can be selected from the archaeological evidence collected on the site which can be processed so as to offer slide-shows and documentaries at the cultural center.

However some other visual means can only be available from the moment when the site's component are perfectly recorded, that is, through a 3-D recording protocol. Such a sophisticated recording shall be done according to the specific environmental conditions which characterised Qajartalik. As mentioned earlier, the site is located on a remote island in a cold and humid environment, and its components are visible on various faces and outcrops with particular reliefs. This is why it should be important to make used of a portable equipment for doing the 3-D recording with the availability of having acces to a generator to recharge the batteries needed for such a task. When the site's components are recorded, not only researchers will get a highly precious document for scientific analysis, but visitors will be able to get a better idea of what the engravings and quarrying zones of Qajartalik look like, from a general perspective to a very close view, without having to be on the real site. Moreover, such a 3-D document, generated through a computerized programme, shall be available for schools, colleges and museums in Canada and abroad. Then will it be possible to pay for everyone a virtual visit to that unique rock-art site of Qajartalik, testimony of the Dorset, Thule and Inuit cultures of the Canadian Arctic.