# MEGALITHIC BURIAL MONUMENTS IN THE BASQUE COUNTRY A PROPOSAL OF ANALYSIS, DIAGNOSIS AND INTERVENTION

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#### Abstract

The megalithic burial monuments are the physical evidence of the social, economical and religious evolution in the Neolithic Era. Their presence all over Europe reveals their significance. They are usually collective tombs and are always located in natural sites. For many years, particularly since the beginning of the 20<sup>th</sup> century, the megalithic heritage of the Basque Country, a region of Northern Spain bordering with the South of France, has been subjected to agricultural use, intensive reforestation and other changes that have resulted in various damage and even losses of megaliths. At present a systematic protocol is required to diagnose their condition and set effective intervention processes. The operational goals are the attainment of their legibility, perceptual recognition, physical consolidation and balance with the immediate environment. In the Basque Country and particularly in the province of Biscay, the implementation of this protocol aims to properly recover and value this heritage for its maintenance for the future. Over one third of the ca. 100 megaliths registered in Biscay have been restored. The design of new megalithic routes and promotion programmes has been essential for the public access and conservation of these archaeological sites.

Keywords: conservation, restoration, Bizkaia, megaliths

## 1. Introduction

One of the most significant expressions of recent Prehistory in the Basque Country is the Neolithic and Chalcolithic megalithic legacy consisting of mainly

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religious monuments like dolmens, burial mounds, cromlechs and other lithic structures [1].

Among the Neolithic funeral rites, the religious-symbolic concept has a meaningful position as an essential and fundamental indicator of the social organization of their builders. These monuments, for the first time in Human History, are transformed into receptacles that have specific meanings that illustrate their emotional and cultural importance.

Dolmens have a rectangular or polygonal funeral chamber, vertically made up of a series of flagstones and covered with a horizontal slab. The chamber is surrounded and, thus, protected with a mound of stones and/or earth that provides the whole with stability. Dolmens, usually reused over many generations, are located in prominent locations that can be seen from a distance as a symbol of a community of dead people and as an indicator for the living.

At present their preservation state is far from ideal, as a result they are at risk. The main reasons of this alarming situation is: the archaeological excavation itself when there is no post-intervention plan in place; intensive and mechanized forest and farming; uncontrolled growth of invasive vegetation that camouflages or covers the monument; use of its lithic elements for building medium height walls, shacks, etc.; construction of tracks, paths and forest routes; despoliation (treasure hunt); vandalism; and atmospheric conditions [2].

Given the circumstances, in the year 2001 the Art Conservation Section of the University of the Basque Country (UPV/EHU) began the design and development of a system of analysis, diagnosis and intervention that aims to recover the physical appearance and cultural value of megalithic monuments.

## 2. Case study

Our field of study embraces the region of Biscay, situated in the West of the Basque Country. It measures 221.232 ha out of which 60% is forest cover, 28% agricultural use and the remaining 12% urban and industrial land.

In this context of forest landscapes and from ca. 5.500 years ago the first Neolithic constructions of Biscay are located.

The worrying preservation state of these megaliths led to the design of a specific action protocol focused on this religious burial monument. A comprehensive protocol of analysis, diagnosis and intervention was elaborated over a ten year period of on-site interventions and compilation and analysis of documentation extracted from proceedings of congresses and international charters and declarations.

All the criteria and intervention methodologies put into practice arise from the Operational Guidelines for the Implementation of the World Heritage Convention. They were developed in the year 2008 by the Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage of UNESCO that includes three international institutions as Advisory Bodies to the World Heritage Committee: ICCROM (the International Centre for the Study of the Preservation and Restoration of Cultural Property), ICOMOS (the International Council on Monuments and Sites) and IUCN (the World Conservation Union - formerly the International Union for the Conservation of Nature and Natural Resources) [UNESCO, *Operational Guidelines for the Implementation of the World Heritage Convention*, 2008, 1-173, http://whc.unesco.org/archive/opguide08-en.pdf].

These guidelines recommend action strategies to be performed on Cultural and Natural Heritage and encourage the concepts of authenticity and integrity. The designed protocol follows the previous precepts and especially focuses on the conservation and restoration of the megalithic heritage of Biscay. The main criteria used are the following:

- Authenticity factor [ICOMOS, The Nara Document on Authenticity. Nara, 1994, 1-3, http://www.international.icomos.org/charters/nara-e.pdf]. Redefined as crucial to reinstate its value to the megalith and protect the authenticity degree of the materials employed in the anastylosis or justified scientific reconstruction of missing parts. The concept of authenticity encourages and allows for the conservation of most of the extant historic material, ensures the matching with the original designs (colour, tone, texture, shape and scale) and avoids any addition that could prevail over the original appearance of the monument.
- Environmental adaptation. The original site where the megalith was built disappeared long time ago; hence, the archaeological remains that result from excavations are out of context [3]. The megalith and its natural setting are considered a cultural place embodied in a natural environment where intertwines the historical record of the monument's past and the time for understanding the monument's present. Quoting the Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas states that "The setting of a heritage structure, site or area is defined as the immediate and extended environment that is part of, or contributes to, its significance and distinctive character" [ICOMOS, Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas, 2005, http://www.international.icomos.org/charters/xian-declaration.pdf]. Another noteworthy quote can be found in the Charter of Krakow, fifth point: "Any intervention involving the archaeological heritage, due to its vulnerability, should be strictly related to its surroundings, territory and landscape" [The Charter of Krakow, 2000, 1-5, http://lecce-workshop.unile.it/ Downloads/The%20Charter%20of%20Krakow%202000.pdf].
- *Minimal intervention*. This concept that originated from the perspective of the safe environment that the Museum provided the Cultural Heritage has been superseded by new criteria. A natural context with unpredictable factors such as the climate, plant development and human action results in a changing reality. During the last years, the criterion of minimal intervention has shifted towards a wider framework that accepts other conservation approaches suited to the actual scenario of the monument located in the landscape [4].

## 3. Results

As a result of the performance of the former criteria on the megalithic heritage of Biscay a specific scientific and comprehensive intervention methodology has been designed for ascribing value to these monuments.

The implementation of the intervention protocol in the geographical area of the Basque Country has led to the development of three megalithic routes: Unbe-Munarrikolanda, Urdaibai-Katillotxu and Karrantza-Haizko and the recovery of 38 megaliths now perfectly recognizable.

The protocol comprised the following treatments in chronological order of implementation.

# 3.1. Analysis of the conservation state, diagnosis and classification of agents of natural and human damage

All the constituent elements of the megalith were assessed and the site was analysed based on a three level scale of proximity towards the monument: immediate, near and far environments. The connection between the monument and the vegetation strata where it is placed was studied - ground cover, herbaceous stratum, shrub level and tree layer - and the vegetation infestation extent was measured in relation to its growth cycles.

The human damages were the most representative and thus, were also assessed and summarized as follows:

- The agricultural exploitation of the land that provides fodder for livestock feed. Pasture improvement techniques were used to keep a regular growth of the herbaceous level. Two resulting damaging activities were observed: (i) firstly, the cyclical scarification that involves the breakup or disintegration of the soil cover; it is undertaken mechanically and reaches 15 to 30 cm below earth; the result was the breaking and dissemination of the blocks belonging to the external structure of the monuments; (ii) secondly, the regular spreading of slurry a fluid mixture of liquid and solid manure of housed livestock on the fields. The high contents of chemicals found in these droppings can gradually cause the disintegration of the blocks of the monuments.
- The intensive forest exploitation of exotic tree species carried out since the 19<sup>th</sup> century (Insignis Pine and Eucalyptus). This led to tree felling, utilization of heavy machinery and land ploughing. As a consequence, megaliths were partially or completely lost.
- The archaeological practice that lacked a post-excavation plan in place. This, eventually resulted in disarranged megaliths without cultural value.

## 3.2. Selection of potential post-intervention uses of the monument

The best way to preserve a monument is to ascertain the necessary conditions that enhance its significance as mentioned by Diaz-Berrio [S. Diaz-

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Berrio, *Terminología en Materia de Conservación del Patrimonio cultural*, 1-8, http://148.206.107.15/biblioteca\_digital/estadistica.php?id\_host=6&tipo=ARTICU LO&id=4648&archivo=11-291-4648aod.pdf&titulo=Terminología en materia de conservación del patrimonio cultural]. In compliance with Litvak King [5], the most appropriate way to approach the Cultural Heritage to the public is by emphasizing their cultural, didactic, touristic,... interest and value. According to the ideas of Cantú [6], the Cultural Heritage is not only a material treasure that should be zealously guarded to keep it safe and away from deterioration or lost. The Heritege does also have an intrinsic value that needs to be introduced to the general public in order to identify and understand it.

This protocol system has allowed for the proper value of the megaliths to be understood as a material record of an economical, social and over all, religious human action pattern. At present, the megaliths of Biscay have an important function as didactical, cultural and touristic resources. For that purpose, on-site signposting systems, cultural routes and dissemination programmes have been carried out.

#### 3.3. Intervention in the immediate natural environment

The well-defined protection area that surrounds the megalith is known as buffer zone [*The Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas*, http://www.international.icomos.org/ Paris2011/GA2011\_CIVVIH\_text\_EN\_FR\_final\_20120110.pdf]. A ring-shaped area is marked around the monument where the herbaceous cover of the former allows seeing the whole magnitude of the megalith in the distance.

Its use was defined in compliance with the protection regulations for megaliths of the Basque Country and in particular, with Zone 2 protection level: "Articulated zones in the immediate environment of the megalithic monuments, including a five meter minimum area around them, defined from their most external borders, reaching a ten meter area when the preservation of the monument requires so. It corresponds to Medium Protection Areas, this level implies forbidding activities that might put at risk the asset conservation, and allows those entailing the inclusion of the site in the natural context where these activities are developed, as long as that inclusion does not substantially distort the cultural asset that is being conserved. Uses relating to cultural, touristic and leisure activities will be fostered." [Gobierno Vasco, *Declaración de Monumento de las estaciones megalíticas de Bizkaia*, Vitoria, 2009, http://www.euskadi.net/r33-2288/es/contenidos/nota\_prensa/bizkaiko\_megalitoak\_monumentu.html].

# 3.4. Assessment of the level of risk and the level of vulnerability and execution of control measures

The limit of risk is the specific ascertained conservation state of the megalith that once surpassed was considered to be an imminent damaging agent [7]. It was

associated with external elements located out of the monument, like the proximity of forest paths and the presence of agricultural and forest exploitations. The level of risk can be diminished by acting on the environment's elements.

The degree of vulnerability is an internal factor of the megalithic monument relating to its capacity deterioration with exclusion of external elements [8]. It can be observed in the molecular structure of the stones and the static construction pattern. Diminishing the level of vulnerability implies the protection of the megalith itself once finished the intervention treatment.

# 3.5. Design and implementation of argued analogical reconstruction methods on external and internal lithic structures

Three different procedures are identified: (i) reinstatement of original parts, (ii) inclusion of non-original consolidation elements, and (iii) elliptical anastylosis.

# 3.5.1. Reinstatement of original parts

The relocation of structural components leads to the recomposition of the overall image of the monument. Any restored element must be an integrated part of the megalith which belongs or used to belong to its structure. Accumulating, and not using, these materials in other areas is considered to have a negative impact because they detract from the discernment of the megalith.

Based on our experience, an accurate categorization system of anastylosis has been designed to be used on reinstatements of multiple elements. It relies on the degree of authenticity or certainty of the undertaken reinstatement. The implementation of this categorization system involves a specific marking method for each category:

- Exact location reinstatement: we know the original exact place of the lithic element within the megalith. 1.4 cm diameter cylindrical piece of grey PVC put into the blocks or spot of grey paint applied to the block itself.
- Approximated location reinstatement: we know that the element was originally placed within an approximated one meter radius. 1.4 cm. diameter cylindrical piece of black PVC put into the blocks or spot of black paint applied to the block itself.
- Diffuse location reinstatement: we know that the element belongs to a particular area of the monument. 1.4 cm. diameter cylindrical piece of ochre PVC put into the blocks or spot of ochre paint applied to the block itself.
- Free location reinstatement: we know that the element is part of the monument but cannot state its specific or approximated original place. 1.4 cm. diameter cylindrical piece of red PVC put into the blocks or spot of red paint applied to the block itself.

Neither the cylindrical pieces put into the blocks nor the spots of paint applied to them are visible in the distance. In consequence, none of these interfere with the global image of the megalith, but in the short distance they form a visual line that tell us the beginning point of the reinstatement and the degree of authenticity of the analogical reconstruction of the added element.

This system of categorization complies with the concepts of authenticity and integrity, both of which are basic criteria described in the Nara Document on Authenticity [http://www.international.icomos.org/charters/nara-e.pdf], The Burra Charter for Places of Cultural Significance [ICOMOS, *The Burra Charter*, 1999, http://australia.icomos.org/wp-content/uploads/BURRA-CHARTER-1999\_ charter-only.pdf] and the Operational Guidelines for the Implementation of the World Heritage Convention [http://whc.unesco.org/archive/opguide08-en.pdf].

In addition, Article 2.ii of the European Convention on the Protection of the Archaeological Heritage that advocates for "the creation of archaeological reserves, even where there are no visible remains on the ground or under water, for the preservation of material evidence to be studied by later generations" [Council of Europe, *European Convention on the Protection of the Archaeological Heritage (Revised)*, Valletta, 1992, 1-9, http://conventions.coe.int/Treaty/Commun/QueVoulezVous.asp?NT=143&CM=8 &CL=ENG], agrees with the correct implementation of a consolidation anastylosis on the external structures of the burial mound. This protects and preserves the original core of the monument in its natural and stable state.

## 3.5.2. Inclusion of non-original consolidation elements

The use of lithic elements of different nature to the originals aims to consolidate and stabilize the inner deterioration of the monument. It is necessary to implement a differentiation system on the new elements to distinguish them from the originals. This system can be applied to two levels:

- Internal level: application of marks to the new element. These should be included in a non-visible area of the block from the outside in order not to distort the image of the cultural asset. Also polypropylene geotextile fabric is employed as internal physical distinguishing element.
- External level: explanatory boards where are stated the original elements and the new ones.

## 3.5.3. Elliptical anastylosis

This concept alludes to the visual recreation of a suggested image that seeks to visualize the borders, dimension and real arrangement of the megalith when it is not entirely conserved. Different types of vegetation or lithic elements are used as resources to show the disappeared magnitude of the megalith. A good example of this can be observed in disarranged burial mounds where the utilization of reference elements along the primal perimeter is essential to show the original dimension of the whole monument.

## 3.6. Removal of added elements

Any element included in the megalithic structure or its immediate environment that might interfere with its correct view or physically damage its structure should be removed. The main purpose of this procedure is the proper relocation of the surroundings parameters in such a way that do not alter the global image of the megalith. The setting is considered to be part of the potential unity of the object and special care should be conferred upon it as stated by Capitel in reference to Giovannoni [9].

Among others, the following elements have been identified: shacks' constructions, municipal boundary fences, mounds of stones alien to the monument, reforestation residues and Civil War trenches.

#### 3.7. Defining a maintenance protocol

Due to the fact that the megaliths are located in a natural environment characterized by cyclical and constant vegetation growth and a combined use of the land, it is very important to design a maintenance protocol that helps to preserve the final state of the monuments accomplished by the intervention throughout the following years. Municipal commitment and participation should be actively sought and encouraged because it is the responsibility of the counties where this Prehistoric heritage is placed to carry out periodical surveys on the state of the cultural assets, the information elements along the routes and the vegetation.

#### 3.8. Study and placing of exposition and protection combined systems

The main goal is to decide on the final arrangement of the structure of the megalith in order to make it stable and opened to the visit of tourists. Besides, it includes the development of a museum-like status planning that comprises different types of path closures, global and partial sightseeing spots, plotting of internal routes and signposting and information systems.

# 3.9. Interpretation and cultural promotion. Introduction of the monument into cultural routes that go across other monuments and places of interest that provide synchronic and diachronic interpretations

Megaliths are grouped in megalithic stations. A very useful promotion tool is to include them into ethnographic-natural routes. In this sense, the Charter on Cultural Routes supports the design of cultural routes: "By respecting the intrinsic value of each individual element, the Cultural Route recognizes and emphasizes the value of all of its elements as substantive parts of a whole" [ICOMOS, *The ICOMOS Charter on Cultural Routes*, Quebec, 2008, 1-11, http://www.international.icomos.org/charters/culturalroutes\_e.pdf].

## 4. Discussion

The preservation of megaliths lies in the intrinsic relationship between these and the natural environment. The natural selection process occurred has resulted in the development of habitats, as for example, meadows and pastures, heaths and plantations for intensive forest exploitation. These types of land uses have led to a series of specific damages on megaliths.

Monuments located in Pine and Eucalyptus cultivated forests show a particular and severe damage caused in a short time when the earth was ploughed using heavy machinery. As a consequence, the mound and chamber are partially or completely lost and eventually disarranged. Those monuments placed in pastures undergo a cyclical and constant damage resulting from scarification work. Year after year their dimension diminishes some centimetres leading to almost unrecognizable low mounds.

Both disarranged and diminished mounds are the most characteristic in Biscay. Hence, the vulnerability state comes from the difficulty to see and identify these assets. This has contributed to further damage by human actions that at worst has led to entire loss. For this reason, one of the most significant intervention procedures has been the reinstatement of their visibility and identity. A buffer zone around each megalith has been created to make it visible in the vegetation and milestones, information boards and signposts have been placed to assist with the identification of these Prehistoric burial monuments [ICOMOS, *Charter for the Protection and Management of the Archaeological Heritage*, Lausanne, 1990, 1-5, http://www.international.icomos.org/charters/ arch\_e.pdf].

In an 80% of the cases the structure of the monuments has been damaged in a different degree that includes mound removals and disappearance of the chamber's flagstones. Physical consolidation has been necessary to stabilize the global image of megaliths. This has been completed by means of an accurate tool based on a reasoned and categorised system of anastylosis that illustrates the exact authenticity degree of the whole monument. The visitor is provided with information about the original and restored areas, the reinstatement degree - low, medium and high - and the materials used.

Specifically, in La Cabaña IV, Cotobasero II, Katillotxu II and Mendigana-Lerreder dolmens, analogycal reconstructions have been accomplished based on archaeological reports. They showed important losses in the burial mound, displacement of the chamber's flagstones and incoherent image. The implementation of the categorised anastylosis system has returned a recognizable image and well balanced conservation state.

The proximity of paths and roads for vehicles has put at risk the integrity of 50% of the megaliths. In order to decrease the level of risk, tracks have been moved away far enough from the monument.

Another serious problem is the addition of elements that result in structural and visual damages. Amongst the added elements are included boundary fences that go across the megalith, medium height walls built up with the lithic elements of the megalith and very near constructions. In this case, the damaging elements have been either physically removed or visually diminished.



**Figure 1.** The preservation state of the Dolmen La Cabaña IV and its immediate natural environment: (a) before and (b) after the analogical reconstruction.



**Figure 2.** The preservation state of the Dolmen Cotobasero II and its immediate natural environment: (a) before and (b) after the analogical reconstruction.

A significant destructive state comes from the archaeological practice that does not include any post-excavation planning and leaves the megalith disarranged after excavation work: La Cabaña IV (Figure 1) and Cotobasero II (Figure 2). Before conservation intervention, burial mounds had practically vanished and several slabs belonging to the chambers were broken or lost. This context leads to reflect on the ethics and scope of certain archaeological works [10]. It is important to point out some ideas that at present are being put into practice in the preservation of Prehistoric heritage located in natural sites and, by extension, in the application of the designed intervention protocol. Hein Klompmaker, Head of the Hunebed Centrum - Dutch pioneer institute in the study and promotion of Megalithism - has developed an ethical criterion to be implemented on Dutch megaliths that limits excavation to particular cases. The principles of this innovative and courageous policy are summarized below [Hein Klompmaker, http://hunebedcentrum.tumblr.com/]:

- An ethical attitude towards the builders of megaliths that concerns for the inviolability of their burial constructions prevailing over archaeological considerations.
- The fact that any type of excavation has a destructive and irreversible effect.
- The occasional scarce recovered grave goods that provide little information as observed in high acidity soils.
- A generic repetition of the results obtained from the excavation findings that contribute few new data and reproduce already known patterns.

In addition, it is worth mentioning the very important recommendation stated in the International Charter for the Protection and Management of the Archaeological Heritage [http://www.international.icomos.org/charters/arch\_e.pdf] that highlights thorough consideration before any type of intervention, especially excavation, is carried out. Another argument that supports the conservation and restoration intervention against the archaeological one is the small amount (ca. 100) of recorded megalithic monuments in Biscay which turn them into a scant and very valuable heritage.

# 5. Conclusions

Any intervention work on the megalithic heritage of Biscay has always raised several questions such as: what has to be conserved and/or restored? what procedures need to be implemented? what criteria must be followed? and what type of result should be sought? The application of the designed protocol leads to the conclusion that any damaged megalith can and should be treated following specific criteria and procedures that return to the monument its visibility and assist in its identification, consolidation and maintenance for the use by the general public. Both educational and interpretation programmes and cultural routes help the public to approach, enjoy and protect this invaluable heritage.

In the last decade the conservation context of the megaliths of Biscay has changed its course. Nowadays, in Biscay, 38 megaliths have been conserved and reinstated their cultural values with the use of explanatory boards and inclusion in cultural routes. Work still needs to be carried out due to the several hundreds of monuments located in the mountains of the Basque Country.

The main objective achieved lies in offering understandable cultural assets to the general public through a well-defined promotion planning that seeks the emotional involvement of the visitor in the cultural and natural environment. The new designed strategy allows for the appreciation of these monuments as a physical record of the earlier eras when people used them as receptacles of their burial and religious beliefs.

Our intervention criteria originated from current international policies on cultural heritage protection and focused on innovative aspects, among which the concept of authenticity and integrity of the monument stands out. This paper aimed to present the scientific work accomplished over a decade that analysed megalithic monuments on-site, based on a protocol to assess, diagnose and design conservation and interpretation proposals. The obtained results, accurate and sifted through a solid analytical filter, show the current state in the field approached from the Cultural Heritage Conservation and Restoration area.

Respect of the megalith builders, their religious and cultural ideas, and their relationship with the natural environment should be supported by integral and authentic maintenance, survival and transmission to the future of what we have inherited from the past.

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