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THE CULTURAL LANDSCAPE 'RISCO CAÍDO AND THE SACRED MOUNTAINS OF GRAN CANARIA': A PARADIGMATIC PROPOSAL WITHIN UNESCO "ASTRONOMY AND WORLD HERITAGE" INITIATIVE

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ABSTRACT

The island of Gran canaria in the Canarian Archipelago is characterized by the presence of sanctuaries at the top of significant mountains and on the scarps of the huge volcanic calderas of the island (the so-called almogarenes) where particular rituals took place at precise moments of the year. In particular, the area of the Caldera de Tejeda presents a paradigmatic example of an adaptive process to a harsh but attractive environment, offering an excellent horizon, with impressive natural monuments such as the Roques Bentayga and Nublo acting as reference landmarks, where land- and skyscapes could be in close contact and permanent interaction. This chain of facts suggests it as the perfect location for a Cultural Landscape interconnected with the sky which might be defended within UNESCO and IAU Astronomy and World Heritage Initiative. The recently discovered light and shadow effects at Risco Caído are indeed a highlight within this particular context. In Gran Canaria, dedicated fieldwork strongly suggests that most of the high-mountain sanctuaries could be related with solar and lunar observations and, probably, astral cults. After presenting a wider cultural context of sites arorund Spain and the world, this paper will show how Gran Canaria ought to be considered as an excellent laboratory where the close relationship between land- and skyscapes in human culture can be illustrated; and how the area selected within the island is a paradigm, within this particular framework, as a marvellous example of a Cultural Landscape worth being declared as World Heritage.

KEYWORDS: UNESCO, Cultural Landscape, Skyscape, Gran Canaria, cultural astronomy, Risco Caído

1. INTRODUCTION

The purpose of this paper is to duly present the chances for World Heritage candidatures to be successful within the context of the Astronomy and World Heritage Initiative (hereafter AWHI). There have been serious efforts to present potential candidates in the last years under the leadership of the President of IAU Commission C.C4, co-author Clive Ruggles in a series of study cases (Ruggles and Cotte, 2010; Ruggles, 2017). These have been inspiring to promote candidatures where the Outstanding Universal Value (hereafter OUV) would be undisputable. This OUV is one of UNESCO's key points to approve a new World Heritage property and to prove it a series of Selection Criteria [https://whc.unesco.org/en/criteria/] has been established:

(i) to represent a masterpiece of human creative genius;

(ii) to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town planning or landscape design;

(iii) to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;

(iv) to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates a significant stage(s) in human history;

(v) to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;

(vi) to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria);

(vii) to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;

(viii) to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;

(ix) to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

(x) to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

Criteria (i) to (vi) could be defined as cultural while (vii) to (x) would be natural. In principle, a candidate should accomplish only one of these criteria − with the exception of (vi) − but often more than one criteria are highly recommended. Most candidate proposers dream with criterion (i), a masterpiece, but this is not strictly necessary and there are cases where other criteria are advisable as, for example, the case of cultural landscapes as cultural properties often ascribed to criterion (v).

A very nice example of a world heritage site which could be fully inserted within the AWHI, because astronomy played a fundamental role in the proposal, is the case of the Jantar Mantar in India. This is the observatory created by Maharaja Jai Signh II in Jaipur[1] (Figure 1). This was the first case of a traditional observatory of the pre-telescope era to be included in the declaration, with 2010 as date of inscription. It accomplished two of UNESCO's criteria:

Criterion (iii): The Jantar Mantar in Jaipur is an outstanding example of the coming together of observation of the universe, society and beliefs. It provides an outstanding testimony of the ultimate culmination of the scientific and technical conceptions of the great observatory devised in the Medieval world. It bears witness to very ancient cosmological, astronomical and scientific traditions shared by a major set of Western, Middle Eastern, Asian and African religions, over a period of more than fifteen centuries.

Criterion (iv): The Jantar Mantar in Jaipur is an outstanding example of a very comprehensive set of astronomical instruments, in the heart of a royal capital at the end of the Mughal period in India. Several instruments are impressive in their dimensions, and some are the largest ever built in their category.

As can be observed, the word 'outstanding' appears in the two criteria and in both cases the observation of the universe, either from a scientific or cultural point of view, is the key of the success. The sentence: 'outstanding example of the coming together of observation of the universe, society and beliefs' is a most important element for any potential future candidate.

[1] http://whc.unesco.org/en/list/1338/documents

Figure 1. The Jantar Matar in Jaipur. This is the first world heritage site where astronomy have played a major role in the success of the declaration. © Margarita Sanz de Lara

In other cases, skyscape ought to be fully integrated within the local landscape, both natural and cultural which are seldom absolutely inseparable. This is the case of the Antequera Dolmens Site in Spain. This proposal was inscribed as a UNESCO World Heritage site only in 2016 (Figure 2). Although criterion (i) was applied, once again criterion (iii) was most relevant for our purposes:

Criterion (iii): Antequera Dolmens Site provides an exceptional insight into the funerary and ritual practices of a highly organised prehistoric society of the Neolithic and Bronze Age in the Iberian Peninsula. The Dolmens of Antequera materialize an extraordinary conception of the megalithic landscape, being exponents of an original relationship with the natural monuments to which they are intrinsically linked. Differentiating themselves from the canonical orientations towards sunrise, the megalithic monuments shows anomalous orientations: Menga is the only dolmen in continental Europe that faces towards an anthropomorphic mountain such as La Peña de los Enamorados; and the Tholos of El Romeral, facing the El Torcal mountain range, is one of the few cases in the entire Iberian Peninsula where the orientation is towards the western half of the sky. This assembly of the three megalithic monuments together with the two natural monuments represents a very distinctive cultural tradition which has now disappeared (Ruiz González, 2015).

Interestingly, the OUV was sustained on the fact that not only the skyscape – clearly manifested in the Dolmen of Viera (Hoskin, 2001) − was relevant but also the interaction between two of the dolmens and the local landscape as reference landmarks in the horizon, which clearly singled out the site with respect to other megalithic enclosures in the UNESCO list such as Newgrange and the Brú na Bóinne area in eastern Ireland.

The people and institutions behind the Antequera Dolmens Site proposal made a huge effort in compiling all the necessary ingredients for a successful result (see Figure 2). They had an excellent candidate with a clear OUV, which included a most relevant and appealing astronomical phenomenology. They created very good marketing with an original logo and a supportive symbolism − the deaf sign for dolmen was used as a mantra in every public support activity and the media. And noteworthy, they had an excellent coordinator and institutional support, with the outcome of a perfect proposal; and people willing to defend it with head and heart. Indeed, a win-win project as time has demonstrated.

But, this was not easy. The first author still remembers the defense of the candidature in front of the ICOMOS inspector sent for the evaluation, and how she had to be convinced that although the modern landscape was not a source of inspiration (one of the three dolmens, El Romeral, is within an industrial area), the horizon topography and the skyscape were still pristine. Apparently, she was convinced. Antequera is a nice example of a multidisciplinary effort pursuing a common wealth. We are now going to briefly discuss another collaborative effort which can be fully contextualized within the AWHI (Figure 3).

Figure 2. Necessary ingredients for a successful proposal to UNESCO: (a) an OUV candidate; (b) an exclusive astronomical phenomenology; (c) a good marketing with an original logo; (d) an excellent coordinator and institutional support, together with a supportive symbolism; and (e) a perfect proposal and people willing to defend it with head and heart. See the text for further details. Photographs by courtesy of Conjunto Arqueológico Dólmenes de Antequera

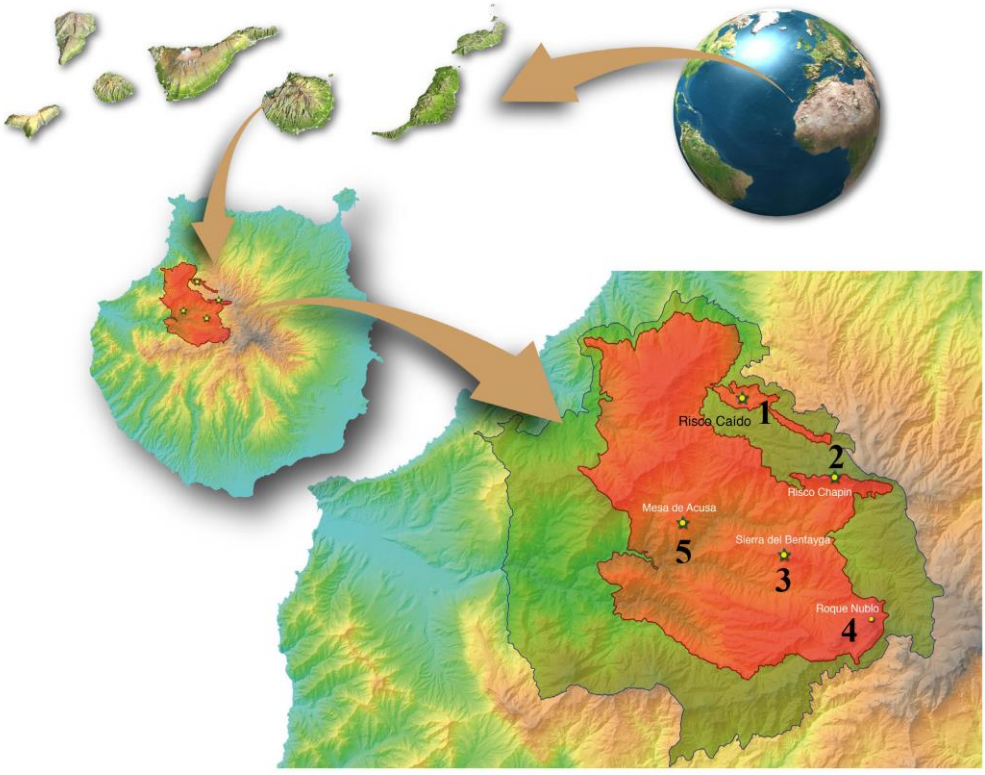

Figure 3. Diagram illustrating the location and geographical context of the Cultural Landscape 'Risco Caído and the Sacred Mountains of Gran Canaria' (area in orange colour, buffer zone in green) in the Canary Islands The numbers state for the most relevant sites discussed within the text: (1) Risco Caído archaeological site, (2) Risco Chapín with the outstanding Cueva Candiles, (3) Roque Bentayga, (4) Roque Nublo and (5) Mesa de Acusa, an imposing troglodytic environment. Figure by courtesy of the Cabildo of Gran Canaria.

2. RISCO CAÍDO AND THE SACRED MOUNTAINS OF GRAN CANARIA

Cultural astronomy studies have now a tradition of a quarter century in the Canary Islands. The statistical relevance of astronomical implications for a certain number of sites and the spectacular character of some of the astronomical hierophanies so far discovered clearly points out to an intentionality (Belmonte, 2015). This suggests that the path of the celestial bodies was presumably an important element for the erection and purpose of many pre-Hispanic sanctuaries. In this sense, Gran Canaria (see Figure 3) presented the most evolved and richest pre-European culture of the archipelago with an undoubted proto-Berber ancestry, which lasted from the turn of the Era to the Castilian conquest in 1483 AD. The social structure was complex and hierarchical, similar to a proto-state. This island is characterized by the presence of sanctuaries at the top of significant mountains and on the scarps of the huge volcanic calderas of the island (the 'almogaren') where particular rituals took place at precise moments of the year. In particular, the area of the Caldera de Tejeda (see Figure 3) presents a paradigmatic example of an adaptive process to a harsh but attractive environment, offering an excellent horizon. This includes impressive natural monuments such as the Roques Bentayga and Nublo, acting as reference landmarks where land- and skyscapes could be in close contact and permanent interaction (Figure 4). This chain of facts suggests it as the perfect location for a Cultural Landscape which might be defended within the framework of UNESCO and IAU Astronomy and World Heritage initiative (Ruggles and Cotte, 2010).

Of special interest is the existence of priests, the faicanes, who belonged to the nobility and were dedicated to religious, political and social duties, possibly including the observation of the sky and the control of time. The relatively high cultural level of the ancient Canarians or "Canarios", a name later extended to the rest of the archipelago, is clearly illustrated by the existence of irrigated land agriculture, with the stock of the products in communal granaries such as the ones in Mesa de Acusa, in the western border of the Caldera. A large number of petroglyph stations, including alphabetic inscriptions, have been reported in Gran Canaria. The examples of Risco Chapín and Risco Caido (inside the Cultural landscape limits; see Figure 4) with the largest collection of pubic triangles in the world − that could be interpreted within a fertility cult − are among the most relevant. The recently discovered light and shadow effects at Risco Caído (Cuenca Sanabria, 2012) are indeed a highlight within this particular context. In Gran Canaria, dedicated fieldwork strongly suggests that most of the high-mountain sanctuaries, often located at high spots dominating a wide, and sometimes, impressive panorama, could be related with solar and lunar observations and, probably, astral cults (Belmonte, 2015 and reference therein).

Gran Canaria ought to be considered as an excellent laboratory where the close relationship between land- and skyscapes in human culture can be illustrated. However, in the proposal we have restricted to those high-mountain sanctuaries within the area of the Caldera of Tejeda, in the northwest of the island. Figure 5 highlights four of the most conspicuous sites of the cultural landscape (1, 2, 3 and 5 in Figure 3) which actually are the bulk of the proposal where sky- and landscapes, and the interaction between both, are clearly illustrated.

Panel (a) shows the light and shadow effect generated inside Cave 6 (see Figure 4) at Risco Caído (as described in Cuenca Sanabria et al, 2018, this volume). Panel (b) is a snapshot of the impressive collection of vulvae engravings in the walls of Cueva Candiles, which entrance is facing the phallic figure of Roque Bentayga, the central behemoth of the caldera. Panel (c) illustrates the mixed artificial and natural horizon observed from the almogaren of Bentayga where a series of astronomical phenomena related to the ancient Canarian cultic and agricultural calendar are manifested (Esteban et al., 1996). Finally, panel (d) shows the decorated walls and ceiling of the manmade Cueva de las Estrellas (Stars' Cave) in Acusa, probably part of the sacred area of the impressive fortified granary near La Candelaria, one of the two examples of such decorative pattern found in fortified granaries in Gran Canaria. From the open area of the cave, a landscape slightly different to the one in Figure 4 is observable. These indeed are outstanding examples of this sort of phenomenology.

The idea is to prove that the area selected within the island (see Figure 3) is a paradigm, within this particular framework, as a marvellous example of a Cultural Landscape worth being declared as World Heritage. In this line of argument, the following OUV criteria have been settled in the proposal:[2]

Criterion (iii): The ensemble of archaeological sites constitutes a unique and exceptional testimony to an extinct island culture that evolved in isolation for a period of more than one thousand five hundred years. Archaeological evidence and documentary sources relative to the proposed property bear witness to the fact that this culture dates back to the first settlers that arrived to these shores from the Berber

[2] Astronomically relevant issues are highlighted in bold face.

Maghreb, which in itself is outstanding, as this thus constitutes a unique case of an island culture with roots in the pre-Islamic Amazigh world, manifestations of which are few and far between. The place expresses a very strong and very original relationship of human beings with nature (both Earth and Sky). **The proposed property constitutes an outstanding testimony to an island culture that integrates the skyscape as a fundamental part of its worldview, its rituals and beliefs, and which has also developed its own astronomical culture in close harmony with the natural environment and the surrounding landscape.** Clear evidence of this is the astronomical sanctuaries, such as Risco Caído that represent the pinnacle of the evolution of this knowledge and practices. This legacy illustrates the odyssey of the indigenous island cultures of the planet that have evolved over long periods without outside influence, ultimately creating their own cosmology and a unique world of knowledge and beliefs.

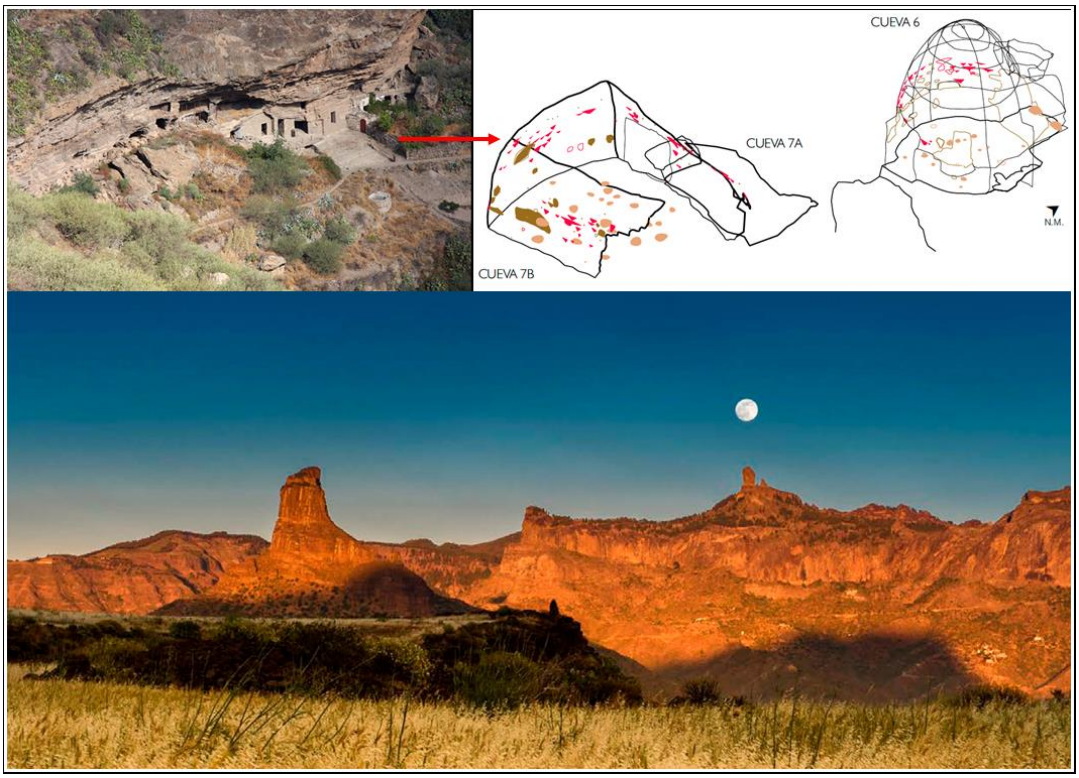

Figure 4. 'Risco Caído' (top); and the paradigm of 'Sacred Mountains of Gran Canaria'(bottom): Roque Bentayga and Roque Nublo (under the moon; numbers 3 and 4, respectively, in Figure 3) are the references landmarks of the inhabitants of the island today and in the distant past, before the European conquest and colonization of Gran Canaria. For further details, see also Cuenca Sanabria et al. (this volume). Image by the authors.

Criterion (v): The indigenous troglodyte settlements of Caldera de Tejeda and the surrounding area constitute an inimitable example of this type of human habitat in ancient island cultures, illustrating a level of organization of space and adaptive management of resources that is highly efficient and complex. The extensive geological backdrop and the natural landscapes fuse with the cave settlements, sanctuaries, sites and terraces, developing a unique culture that still maintains its principal references, as well as its symbolic and cosmological connotations. This type of human settlement has survived through history, creating new ways of occupying the space that express the syncretism between the indigenous culture and the new culture established after the Spanish conquest. The survival of techniques and ancestral land uses, such as transhumance, should also be added to this. **The orientation and alignment of certain sanctuaries and artificial caves also indicate the intimate relationship that this type of settlement has with the skyscape and the principal symbolic elements of the landscape.** Spatial distribution of the settlements and the archaeological finds give us an in-depth understanding of how indigenous people used the territory of the sacred mountains. The areas surrounding the sites contain habitats and species of flora and fauna that also inform us on the way of life of the early settlers. Knowledge of the skills and cultural traditions of the indigenous settlers on the island has been definitively changed as a direct consequence of the new evidence provided by this incomparable territory.

Those two criteria are well illustrated in Figures 4 and 5. Landscape and skyscape play a complemen-

tary role but at the same time, here in Gran Canaria and notably in the area of the proposal, we found a paradigmatic example of the interaction between orography and the sky. The comparative analysis made for the proposal suggests that there is no other site in the world where such a combination is so clearly illustrated although parallelisms could be found with Rapa Nui, Thebes in Egypt and indeed Antequera, but not in such a gigantic and outstanding scale as here.

Figure 5. Land- and skyscape and cultural astronomy in interaction in four relevant sites in the area of the world heritage proposal: (a) The phallic beam of light entering Risco Caído Cave nº 6 at the moment of the summer solstice; (b) The pubic triangles decorating the impressive, and manmade, Cueva Candiles which is facing Roque Bentayga; (c) The almogaren at Bentayga facing imposing landmarks in the eastern horizon; and (d) Cueva de las Estrellas in La Candelaria fortified granary at Acusa. See the text and Cuenca Sanabria et al. (this volume) for further discussions. Image by the authors.

3. CONCLUSIONS AND FUTURE PLANS

In this paper we have shown how the area of the nomination of 'Risco Caído and the Sacred Mountains of Gran Canaria' is the perfect location for a Cultural Landscape which might be defended within UNESCO and IAU Astronomy and World Heritage Initiative. At the moment of writing these lines, the proposal is ended (de León and Marín, 2018) and has been submitted to UNESCO. Possibly in the time elapsed between now and the publication of this paper the evaluation by UNESCO will take place and perhaps the final decision will have been taken.

Regardless of the outcome of the final evaluation of the advisory bodies (ICOMOS) or the resolution of the Committee of World Heritage, we are convinced that this proposal definitely opens a new window to the best knowledge and enhancement of this kind of manifestations, which are only sparsely represented on the World Heritage list. If the outcome is positive, however, it will be the time for hard work on managing, preservation and outreach.

Indeed, it will be the time for some of the authors to extend the experience to other sites in Spain and elsewhere (see Belmonte et al., 2016), engaging in new promising projects where OUV can be demonstrated. Talayotic Menorca and its prehistoric skyscapes (Hoskin, 2001; Hoskin and Belmonte, 2002) is one of such objectives.

Another most relevant example is the case of the seven-stone or Alentejan antas. The seven-stone antas are a distinctive form of megalithic tomb (anta being the Portuguese term for dolmen) with a chamber often formed by seven slabs, a capstone, an access corridor and, only seldom, a closing slab (see Figure 6). They were built between the 5th and the 4th Millennium BC, being among the eldest megalithic monuments in Europe. The 177 examples whose principal orientation has been reliably determined all, without exception, face within the arc of sunrise — the part of the horizon where the sun rises at some time during the year (or moonrise). The extraordinary consistency in an orientation pattern that extends over hundreds of kilometres provides an exceptionally clear indication of its astronomical origin, perhaps the oldest in human history that could be undoubtedly proven (Hoskin, 2001; Belmonte et al., 2017).

Figure 6. Anta de la Marquesa, a nice example of Alentejan anta in Valencia de Alcántara (Cáceres, Spain). The coordinator of the Gran Canaria proposal, co-author Cipriano Marín kindly served as a natural scale for the photograph. © Cipriano Marín

They were built over a wide area extending over the present-day regions of Alentejo in Portugal (hence its name), where most of the antas are located, and Extremadura in Spain. The main concentrations of sites within the group, including the best preserved and some of the most impressive structures are around the towns of Évora (Portugal) and Valencia de Alcántara (Spain). This group of megalithic monuments would hence be an ideal candidate for a serial nomination of an international character although it will not be an easy task for the same reasons, precisely. Priorities will need to be fixed and the management of the proposal will be further complicated when dealing with more than one administration. But it is indeed worth the effort.

The AWHI is being a powerful tool on the hands of the specialists for the recognition of astronomy as a most relevant component of human culture and it is our duty to make the best use of it. Future will say if we will be successful in our purposes or not.

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