POLITICS AND THE PORTUGUESE UNDERWATER CULTURAL HERITAGE

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INTRODUCTION

Portuguese elites never cared much about the country's cultural heritage. In the 19th century Portuguese authors such as Eça de Queirós and Ramalho Ortigão addressed this frustrating reality. With characteristic irony, Eça de Queirós described in *A Ilustre Casa de Ramires* the absolute incomprehension and disdain of the nobleman Gonçalo Ramires for his own family past:

> *Bento looked at the floor and then closed his eyes, thinking. «Yes. In the bathroom, above the red chest there was a flask with powder, wrapped in an old parchment, like those in the Archive». «That's it!» Gonçalo declared «I needed some documents in Lisbon, because of that dreadful problem with the rent from my Praga farm, and by mistake, in the rush, I took a perfectly useless parchment from the Archive. Fetch me the package, but be careful with the flask»*[1].

Ramalho Ortigão eventually dedicated an entire book to this subject — *O Culto da Arte em Portugal*[2] — where he painfully detailed a long list of crimes against the cultural heritage, and the absolute incomprehension and disdain of politicians, journalists, and the general public towards Portugal's ruins, monuments, archives, and history. Ortigão

[1] QUEIRÓS, 1900: 38. ed.
[2] ORTIGÃO, 1896.

details a long list of destructions perpetrated in the name of convenience, or just through abandonment and public ignorance.

The submerged cultural heritage is perhaps in a worse situation today, largely because it is invisible. Sometimes looted, other times abandoned by the responsible agencies, the Portuguese submerged cultural heritage was ignored throughout most of the 20th century. In the last two decades of that century it received some political attention and financial support, but the state did not manage to win the trust and the interest of the public and natural stakeholders, such as the Navy, museums, universities, fishermen, sport divers, or coastal municipalities. The secrecy and infighting that characterize traditional Mediterranean archaeology was championed in Portugal by a small group of archaeologists whose relentless refusal of the idea that the public administration exists to serve the citizens created a dysfunctional situation where looters were often the only active groups. In his Introduction[3] to the *Oxford Handbook of Maritime Archaeology*, George Bass pointed out that, as a class, archaeologists have a track record of negligence: it seems that we publish about 25% of the sites we destroy. Bass' assumption is based on a number of studies suggesting that over the last 50 years less than 25% of the materials and results of professional archaeological excavations have been properly published[4], 70% of the Near East excavations have not been published[5], and that perhaps 80% of all Italian archaeological materials remain unpublished[6]. It is difficult to argue that the situation in maritime archaeology is better than those mentioned above. As a result, publications are scarce and not very informative, access to images and reports is difficult, and archaeologists sometimes sit on their sites for decades, without digging or publishing whatever information has been retrieved. In this context, a long list of sites awaits intervention, and some are probably lost forever.

The state agency that controls maritime archaeology — the Direção Geral do Património Cultural (DGPC) — continues to see its role as a gatekeeper of the cultural heritage and never developed a vision or a plan, shared its intentions with the public, explained its policies, setup clear rules, or announced a strategy for the management of the underwater cultural heritage in the country. Moreover, public workers within that agency exert what little power they have with a notorious lack of accountablity, using the bureaucratic rules to persecute some archaeologists and support others, and creating a shameful partisan policy that Brazilians describe with irony as: «*Ao inimigo: a lei!*» (To the enemy: the law!).

[3] BASS, 2011.
[4] BOARDMAN, 2009.
[5] ATWOOD, 2007; OWEN, 2009.
[6] STODDART & MALONE, 2001.

1. SHORT OVERVIEW OF THE PORTUGUESE SITUATION

A long list of underwater archaeological sites has been reported found by the media, or among sport divers over the last century, but published information is scarce and not always reliable. In the past 50 years shipwreck sites were reported along the Portuguese coast, at Caminha, Viana do Castelo, Esposende, Vila do Conde, Porto, Aveiro, Figueira da Foz, Nazaré, São Martinho do Porto, Baleal, Peniche, Ericeira, Porto Dinheiro, Praia da Samarra, Magoito, Cabo da Roca, Cabo Raso, São Julião da Barra, Paço d'Arcos, Lisbon, at the Tagus Mouth, Caparica, Setúbal, Sines, Arrifana, Carrapateira, Sagres, Lagos, Portimão, and along the coast of Algarve, as well as in the Azores and Madeira Archipelagos. The information about most of these sites is however scarce and often published in newspapers and magazines. The best overview published so far is still Mónica Bello's popular book *A Costa dos Tesouros*[7], and I am not aware of any ongoing or planned effort to study and share the Portuguese submerged cultural heritage, raise awareness, involve the stakeholders, and cherish this important layer of our common past.

During the 1980s Francisco Alves, director of the National Museum of Archaeology, started an inventory of the underwater cultural heritage by systematically collecting information on underwater sites, artifacts brought up by fishermen and sport divers, and historical accounts of shipwrecks, all in the same database. In the 1990s, however, the Portuguese government inexplicably ignored Francisco Alves' efforts and achievements, and in 1993 legalized treasure hunting and welcomed a crowd of international crooks, thieves, and liars, who proposed an array of delirious schemes — such as «raising a caravel» — to an amazingly uneducated and naïve committee of politicians and naval officers. The treasure hunting law — Decreto-Lei 298/93, of August 21st — ignored the basic tenets of archaeology and established an environment in which the Portuguese Navy was supposed to regulate and oversee the extraction of artifacts from archaeological sites. This surrealistic situation was reverted in the mid-1990s, when a newly elected government repealed the treasure hunting legislation — before any licenses were issued — and created a state agency for the management and protection of the country's submerged cultural heritage.

The Centro Nacional de Arqueologia Náutica e Subaquática (CNANS) lasted less than a decade, however, and is now downsized and largely inoperative, stripped of most of its funding and, as I am writing these lines (May 2017), not even staffed by a single nautical or maritime archaeologist. Busy with infighting and bogged down by small politics, ignorance, and an absolute lack of leadership, the Centro Nacional de Arqueologia Náutica e Subaquática doesn't seem to have much time or interest in defining its mission, nor organizing (and energizing) the Portuguese archaeologists and get them to work on a plan resulting from a vision and a national long-term strategy.

[7] BELLO, 2005.

2. THE STRATEGIC IMPORTANCE OF THE PORTUGUESE SUBMERGED CULTURAL HERITAGE

It is difficult to imagine a healthy society oblivious about its past[8]. A country or region's cultural heritage is the base for its identity, its social glue, which is based on community feelings, and it confers a sense of meaning and continuity in a world that is increasingly more diverse and integrated, and where demographics are increasingly dictated by migrations and economic imperatives.

Studies in urban planning have shown that familiarity is an important element for the quality of life, and that most people are happier in an environment that conveys a sense of belonging, permanence, and stability. The cultural heritage is an intangible but integral part of the environment, sometimes referred to as the soul of a landscape. Monuments and popular memories or traditions convey a sense of a common past, encompassing good and bad memories, and fostering creative intellectual discussions based on interpretations of historical events, collective memories or amnesias, sometimes sanitized or embellished, sometimes demonized and charged with negative feelings. History is a source of wisdom. Howard Zinn once said that if we don't know our past we will have to trust our politicians, a joke that contains a deep and important truth.

Like its associated narratives, the cultural heritage is continuously being created and destroyed. War is a major cause of destruction, together with greed. Political and religious forces determine what should be preserved and destroyed, and economic development is a major cause of change, often with a tremendous impact on culture and the cultural heritage narratives.

As communications make the planet smaller, the world appears more complex and layered. Landscapes are in continuous change, preserving, changing, destroying and renewing themselves, a process that results in complex and layered mixes of old and new constructions and memories. To make sense of these landscapes is often an exciting and polemic intellectual process, which creates opportunities for learning and rethinking both the past and the present.

3. GLOBALIZATION AND THE HUMANITIES

This intellectual process is happening, however, in a difficult social context. In the late 20th and early 21st centuries, in the western world, wealthier people engaged in an ideological war against the common good and organized and funded a remarkable movement advocating a sharp reduction of the tax burden of the wealthier classes, a reduction of the public function, and a transference of the tax burden to the middle and lower classes[9].

[8] CASTRO, 2015.
[9] WILKINSON, 2005.

This political process had an important effect on the size of the state and the services it provides. Infrastructures were privatized and turned into for-profit businesses, the social responsibility of corporations was greatly reduced, the media was bought and controlled by a small number of wealthy international players, and pro-small-government lobbyists flooded newspapers, magazines, and televisions, effectively instituting what has been called a monolithic global thought in which the public function is demonized and the private sector idolized. The result of this concerted international effort was that throughout the last decades of the 20th century and early decades of the 21st, the political spectrum moved sharply to the right[10].

In present politics greed and selfishness are often treated as social virtues, and governments are no longer seen as the referees of conflicts in society, but rather as the representatives of a wealthy international minority whose main role is to facilitate trade and economic growth. These policies are affecting the preservation, study, conservation, and divulgation of the cultural heritage everywhere. Contractors that previously had to account for the potential destruction of the cultural heritage impacted by their work gained bargaining power, public watchdog agencies were defunded and crippled by the threat of lawsuits, museums were forced to close or de-access collections, conservation laboratories were forced to raise prices for treatment, dating, and testing of artifacts.

The study of the humanities is under attack, mostly in the Anglo-Saxon world, but the global reduction of resources for the study of the human adventure is affecting other countries and cultures as well, as the media boasts the need for more investment in science, technology, engineering, and mathematics (STEM), at the cost of the humanities and social sciences.

4. THE EUROPEAN MODEL

In this context, the submerged cultural heritage was perhaps hit harder, because it is submerged and therefore invisible. With a few exceptions, such as Spain or France, for example, maritime archaeology was taken off the top priority lists by many governments. Submerged cultural sites are regularly destroyed by real estate promoters, building or dredging contractors, trawling, harbor works, looting, and treasure hunting, a legalized version of looting invented in the USA in the 1970s.

The defunding and privatization of education also impacted the cultural heritage. As mentioned above, in the west, archaeologists publish about 25% of the sites they excavate, and thus destroy. This sad reality was further hampered by the defunding of state scientific agencies and research institutions, and in this environment grants are increasingly competitive and smaller, and archaeologists are incapable of raising funds for archaeological excavations. This situation is perhaps worse for underwater excavations,

[10] POWEL, 1971.

because waterlogged artifacts require extra care, which costs extra money. Additionally, archaeology is a relatively recent discipline, still plagued by amateur attitudes and behaviors. Many archaeologists still treat their excavations as personal property, don't publish and advertise their discoveries, don't share their primary data, tend to organize in small groups and engage in tribal wars over trivial matters. Archaeologists typically treat their data and their pictures as important secrets, sometimes delay publications, and traffic archaeological information within small groups. This environment makes it difficult to develop the idea that archaeology has some sort of social value for the wider public.

Some countries have agencies that try to organize the research along top-down strategies, and end up preventing younger archaeologists from digging or publishing, restricting a healthy dialogue that the discipline desperately needs. Moreover, the petty secrets and petty fights between archaeologists alienate politicians, journalists, the public, and some of the most important stake holders, such as sport divers, fishermen, the country's navies, local authorities, museums, and diving clubs.

In spite of this grim situation, however, there seems to be a wide consensus about the importance of preserving a country's cultural heritage: most stakeholders seem to agree that educated societies are stronger, healthier, happier and smarter. The larger the middle class, the better educated societies are, and the better quality of life they promote. Middle classes are actually growing around most of the planet, even if they are being compressed and impoverished in the west, and inequality is affecting the west perhaps as much as the rest of the planet.

Middle classes have shrunk in the US and Europe for a generation now, and as they are the main consumers of cultural goods and productions — libraries, museums, concert halls, orchestras, opera houses, literary magazines, books, etc. — these cultural goods are under pressure. Still, the tourism industry looks like a profitable solution for this problem, because with middle classes shrinking or not, cultural tourism is still an appealing source of income for many countries.

In spite of all these global problems, and of the dangers for freedom and democracy posed by the accumulation of wealth by a small international elite, the developing world is reacting with impressive vigor, profiting from a small reduction of the planet's hopeless poverty, and the rise of literacy, which is today almost 100% among the world population below 25 years of age.

It is interesting and exciting to imagine a world in the near future where the mainstream philosophers, historians, archaeologists, sociologists, scientists, and artists will likely be non-European. Diversity and plurality foster creativity, and the archaeology of the last century was predominantly European in its views, assumptions, research questions, and practices[11]. As Geert Hofstede put it, culture is the software of the mind, and

[11] HODDER, 2011.

culture pre-establishes the sets of outcomes of any research project. American philosopher Daniel Dennett likes to quote one of his students, B. Dahlbom, who said that one «can't do much carpentry with bare hands, and can't do much thinking with a bare brain»[12].

He brought up this subject many years ago: our brains think better and faster when we learn thought processes he called thinking tools and intuition pumps. According to Dennett, thinking tools and intuition pumps «are apps that we upload to our necktops», and societies are as smart as the thinking tools available in them. James Flynn[13] had demonstrated that, with exactly the same bare brains, we score much higher today in IQ tests than we did 80 years ago. It is culture that is making us smarter. The cultural heritage is a powerful source of thinking tools, and any investment in its study and protection will help create a smarter and more sophisticated society. And cultural identity ensures some level of diversity in the globalized world.

As already mentioned, tax cuts on the wealthier are putting pressure on governments to reduce public funding for research. A lot has been written since the 1970s on the necessity of taxpayer-supported research and art production. Creativity is an important component of the scientific process[14].

Diversity and plurality of ideas are valued differently from country to country and through time. For instance, presently America and Europe advocate small government and deregulated capitalism, although continental Europe still defends that a society dominated by markets offers less individual and social options. In 2005, American composer William Osborne noted that «Germany's public arts funding, for example, allows the country to have 23 times more full-time symphony orchestras per capita than the United States, and approximately 28 times more full-time opera houses». This is a well--studied phenomenon: the tastes of the more educated minorities have no economical appeal for most private sponsors. Unless the public is rich and can pay the full price of production of a four-hour opera, for instance, it is impossible to imagine how the cost of such a production can be met without public subsidies. The same can be said for graduate studies, museums, the performing arts, and archaeology.

A good example is precisely maritime or nautical archaeology. For television producers and shareholders, archaeology can rarely compete with treasure hunting for audiences. Shallow and glowing stories of sunken treasures, with ghosts, sea monsters, and invented anecdotes, ensure wider audiences over any archaeological documentary anytime, anywhere. Archaeologists are bound by ethical principles and cannot lie, embellish their stories, or propose exciting unproven hypotheses that seduce the large public to watch their documentaries in numbers large enough to justify the interest of advertising companies.

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[12] DENNETT, 2013.
[13] FLYNN, 2012.
[14] KUHN, 1962.

Although the dumbing down of the media is noticeable, the level of the cultural production is not as infantile as in the USA, where widely watched channels, such as the *History Channel* or the *Discovery Channel,* regularly broadcast documentaries about fake monsters, aliens, or ghosts without the slightest care for truth or reason. In Europe the situation is not yet as egregious. For instance, 95% of the funding for the Franco--German television channel ARTE — which broadcasts exclusively cultural programs — comes from a television tax. Paris is famous for its large and widely advertised budget for public projects. Its museums and exhibitions are world famous and fuel the largest tourist industry in the world, worth 7% of the country's GDP[15]. The French policy of promoting a state idea of culture, sponsored by taxpayers' money, has been maligned by the populist right-wing since the early 1990s[16], but their viewpoint did not yet won the support of the public opinion, and has been largely ignored.

The prevalent idea in Europe is still that in democracy the population should have access to an as-wide-as-possible diversity of cultural goods because society is an organism that cannot survive without intellectual elites, and because educating, training, stimulating, and recruiting intellectuals requires taxpayer-supported research. Additionally, Europeans still cling to the idea that unfettered capitalism tends to destroy traditional culture and ways of living. Based on advertising, which promotes acritical compliance and aims at destroying diversity and independent thinking, unregulated capitalism is still considered a leveling force that pushes a one-size-fits-all model for society and makes the world homogenous (e.g. Microsoft, Google, or Starbucks). Maximizing profit while maximizing the diversity of products offered is ultimately impossible, and many Europeans believe that savage capitalism breads alienation, uniformity, and conformism.

5. A STRATEGY FOR PORTUGAL

Portugal is a poor country, with a weak economy and under constant pressure from international agencies to lower its public budget and diminish the size of the state. Large cultural policies are out of the question. The vicious cycle of lack of education and critical thinking makes the public ask more football and less cultural productions. In this context, what can Portuguese archaeologists do to protect, study, preserve, and exhibit its cultural heritage? How can they compete with other countries for cultural tourism, the best and most reliable source of income generated by the cultural heritage? These questions have a vast array of practical answers with different costs and time frames. But the key factor in cultural policies seems to be a strong commitment to long-term strategies.

[15] FRANCE DIPLOMATIE, 2013.
[16] FUMAROLI, 1991.

What can Portugal offer to the cultural tourism industry? Shipwrecks *in situ* are mostly invisible and cannot be exposed to the elements indefinitely. And it is relatively easy to bring a crowd to a museum once, for a major exhibition, but to make them keep coming regularly is not a trivial problem.

Touristic countries such as Portugal can aim at the creation of museums designed to be visited by one-time tourists, and keep the internal markets in mind, at a smaller scale, creating exhibitions that can excite the Portuguese public repeatedly. It seems safe to assume that artifacts belong in one-time museums, and installations and temporary exhibitions are better suited to interest the public repeatedly and regularly.

The first step for an effective strategy should be an assessment of the situation. The publications, exhibitions, and on-line resources available — such as the DGPC website *Endovélico* — seem incomplete and not terribly organized. For instance, for the submerged cultural heritage it encompasses both archaeological sites and documental data pertaining to ship losses. The levels of information vary and sometimes there is no bibliography on the sites inventoried. It would be useful to organize a joint effort, involving the DGPC, the municipalities, and the Navy, and develop and share municipal inventories, independent and detailed, with the sites separated from the archival data, to encourage a decentralized model, based on the local communities, and if possible involving the populations.

The second step would be to promote the development of a specific national database of submerged archaeological sites, with a diagnostic of the global situation, and prognostics per municipality, with emergency plans of action and budgets. In other words, to produce documents detailing the potential value of the submerged sites, their situation in terms of threats and opportunities, and the costs associated with not doing anything, promoting palliative and protective care, surveys, or intrusive interventions.

The third step would be to promote cultural tourism in Portugal and subsidize a few flag projects, perhaps based on a small number of selected interesting stories, rather than on the archaeological sites. Archaeology brings the past back and allows the public to look at itself against different backgrounds. It makes people think and it provokes emotional reactions. Vast collections of artifacts and expensive exhibitions are not necessary in the age of computer graphics. The question of the value of artifacts is complex and difficult to address. What is it that makes us value genuine archaeological artifacts or works of art over replicas? Most people agree that to have the real objects that connect them to past events will help them feel and relate more intimately with those events. The value of the original archaeological artifacts poses, however, questions that archaeologists need to address. Archaeologists destroy the sites they dig and try to record them layer by layer, but all representations of excavated sites are virtual by definition. They are traditionally expressed through plans and sections, and now through 3D computer files, photogrammetric meshes of points, and virtual reality environments.

Artifacts, now as ever, pepper our narratives and help us land life and reality to them. But the stories are told through our drawings and texts, and those can be treated and shared in spectacular ways in museums for prices that are lower every year.

Perhaps we should protect our sites *in situ* as much as we can, hoping that one day our descendants will have non-intrusive technologies that will allow a better understanding of the sites we are digging today. And if so, we could share what we know in museums and exhibitions that are relatively cheap to develop including new technologies, such as virtual and augmented reality. Moreover, to share the wealth of historical data that each kilometer of waterfront in our country holds with school children and the public in general would be the best way to protect it. Websites, small temporary exhibitions, on-line databases and associations of divers, dive clubs, grassroots organizations encompassing biologists, sport divers, archaeologists, local managers, scholars, and policemen are the best way to ensure that each municipality's submerged cultural heritage is valued and protected. The archaeology of the 21st century should be an archaeology of shows and discussions, and local, public, critical, didactic, and community archaeology.

During the 19th and 20th century scholars have developed an impressive work, inventorying and studying European archives, monuments, and artistic treasures. Francisco Contente Domingues has published a story of the late 19th and 20th century scholarship in this domain and the bibliography available is impressive, both by its extension and its quality.

The majority of the most important documents pertaining to the Portuguese exploration of the world in the 15th and 16th centuries are transcribed, published, and studied, and the naval history bibliography constitutes a solid base for the study of ship typologies, design, construction, rigging, and sailing. The body of publications about life aboard and the mentality and social status of the soldiers, sailors, captains, pilots, shipwrights, merchants, intellectuals, and remaining stakeholders is less complete, and has space to grow.

There is no reason why Portugal should not explain and divulge its maritime past to the world and use it as an appealing foundation for the development of cultural tourism. I am not advocating a return to the jingoistic narratives of the Estado Novo (1926--1974). On the contrary: I am proposing a cosmopolitan narrative which acknowledges the good and the bad sides of all contacts between civilizations, without ham-handed interpretations and moralist judgements. Portugal played a central role in an amazing period of the history of humankind: the globalization of the 16th century and this is a story with profound implications in the histories of science, of the ideas, of art, and of culture. Contacts between civilizations that were violent to begin with were often violent, but they were also exciting and almost nobody is interested in telling the good side of that story.

6. A FEW THOUGHTS ON CONSERVATION

Given the state of the art conservation techniques we have today, some colleagues argue against the musealization of wooden structures from shipwrecks because the technologies we have today do not guarantee the preservation of these structures forever. But conservation *in situ* is an expensive strategy that requires periodic inspections, databases, assessments, diagnostics, prognostics and action plans. Few governments would invest the necessary means on such projects, which require the allocation of resources now to preserve a cultural heritage society cannot enjoy and leave it to future generations, so that they can have a better environment with better preserved archaeological resources. This discussion is impossible in abstract terms. Every case has its specificities and each solution to dig or cover and protect *in situ* should be carefully chosen, on a case by case basis.

I would argue that the social value of the cultural heritage can be expressed in present knowledge, which should be shared with an as-wide-as-possible public. The 2001 UNESCO Convention on underwater cultural heritage states in Article 20 that «Each State Party shall take all practicable measures to raise public awareness regarding the value and significance of underwater cultural heritage and the importance of protecting it under this Convention». This idea is further developed in its Annex, Titles XII and XIV: «Interim and final reports shall be made available according to the timetable set out in the project design, and deposited in relevant public records»; and «Projects shall provide for public education and popular presentation of the project results where appropriate», respectively. This is the most important component of any professional study of the underwater cultural heritage. The social value of archaeology lies on a wide divulgation of archaeological finds, aimed at plural and diverse publics, and fostering discussion about the past, which is not an established reality, but a reconstruction that every generation of scholars attempts.

Conservation *in situ* can be — and has been — an alibi for stasis and irresponsible abandonment of the cultural heritage to the elements. Shipwrecks and submerged structures must be surveyed, entered into management databases where their condition is recorded and diagnostics and prognostics can be made, and actions planned and budgeted, but I do not believe that societies should prevent their scholars from digging, studying, publishing and sharing their views of the past. The current trend, which sometimes seems to encourage preservation *in situ* at any cost, even without the mechanisms to assess the condition of the shipwrecks preserved *in situ*, has a dangerous prohibitionist component. In certain countries, such as Portugal, to cite just one example, the conservation *in situ* argument was used to stop almost every excavation in the past 20 years, and the text of Rule 1 of the 2001 UNESCO Convention on Underwater Cultural Heritage was stretched to impede archaeological research. Rule 1 states that the authorization of activities directed at underwater cultural heritage must be justified only if they

make «a significant contribution to protection or knowledge or enhancement of underwater cultural heritage». The word «significant» grants enormous latitude to permitting agencies.

I would argue that conservation *in situ* is a particularly important issue after sites are excavated or looted. Most archaeological sites are or should be reburied as there are not enough museums in the world to house every archaeological find. The past should not rule the present in that sense. It is impossible to preserve everything and we are only expected to do our best. Once sites are excavated, some are treated, conserved, exhibited in museums and their collections curated. Others are stored in warehouses, where they are sometimes forgotten. Others are reburied, and their condition should be monitored. Excavation is a very destructive process. The exposure of buried timber changes its biochemical environment and the excavation process is often abrasive and destructive. Whatever is left on the bottom must be reburied, stabilized, protected from looters, dredge works, land fillings, and trawlers, to cite just a few threats.

7. RECORDING

Technological advances in tridimensional recording and representing made it quicker and cheaper to assess and record archaeological sites, and keep them as virtual models, which can be shared with the general public, their colleagues, and used to encourage further research. Buried sites do not have to be forgotten and completely out of reach: in fact, they can be shared on the internet, integrated in computer games, classes, movies, documentaries, and popular publications.

We should not be deterred by the fear of misuse of archaeological information. The best policies to protect a community's cultural heritage is to share it, to let it be photographed, recorded, copied, circulated, discussed and published freely. Bad interpretations are a part of lie. They have always been around and will never go away. Some of the worse interpretations have been developed by professional archaeologists. It is not possible to place a policeman behind every citizen, and a policeman behind every policeman, and nobody can say which interpretations are entirely correct, to start with.

Archaeologists are sometimes afraid of allowing free circulation of images and primary data for a number of reasons: fear of plagiarism, fear that their images might be published to illustrate fake theories and stories, fear that images get commonplace and banal, and fear that their primary data may be found flawed or used to contradict their conclusions. These fears are largely unfounded. Archaeologists record and interpret remains of past human activity. Few professions are as subjective as ours and we should get used to it. Firstly because few archaeological sites or complexes are complete, secondly because we cannot record everything and we end up recording what we deem important, and thirdly because even if we were flawless, the accuracy of our recordings depends on the precision of our tools. Archaeological interpretations are iterative and

change every generation, regardless of the outlandish theories that might or might not be published, illustrated with our pictures.

Philosopher Avital Ronell said that we cannot build a mirror that reflects our stupidity and therefore we should be humble and careful[17]. This is a particularly valid piece of advice for archaeologists. Sharing our discoveries early and with a wide set of peer reviewers is paramount to the success of an excavation. A plurality of ideas and viewpoints is the best assurance against committing serious mistakes. And archaeology must be public or it has no social value and should not be funded with tax-payer's money.

8. EXCAVATION

Excavating is expensive and generates artifact collections that need to be conserved and curated forever. It is difficult to advocate the necessity of increasing the national archaeology budget, even in countries that waste billions of euros in pharaonic projects such as football championships or in weapons for war games, but salvage and mitigation works are regulated and are payed for by the entities that destroy the archaeological sites.

In the present political conjuncture contract archaeology should represent the core of the excavations, as it happens in most countries around the world. This is a perfectly functional situation, where young archaeologists can be trained. Perhaps the only improvement to hope for is the outreach component. All contract archaeology works should aim at being community projects, involving the local and interested populations.

Primary data should not, however, be secret and considered property of the archaeologists in charge of a project. Portuguese law already establishes the necessity of making primary data public after a certain number of years, and archaeologists should strive to develop a culture of cooperation and respect, where primary data and images are widely shared and publications come out in a timely manner.

The evolution of ideas is wasteful and feeds on the chaos and randomness of brainstorming. Creativity has always been a part of archaeological thought, and excavations should be as transparent as possible. Cooperation with artists, schools, editors, and other stakeholders should be encouraged and brokered by the municipalities. Ian Hodder demonstrated that his work at Çatalhöyük was enjoyed by local and international constituencies at many different levels, some of which pathetic, like the Turkish nationalist interpretations — there were no Turks in Turkey for another 8,000 years after Çatalhöyük was abandoned — or the cult of the goddess developed by American tourists. But his position as an archaeologist was just that of sharing, to the best of his knowledge, and with as much openness as possible, everything he found, and let the world enjoy it in its own way[18].

[17] RONELL, 2002.
[18] HODDER, 2011.

The cooperation between artists and archaeologists also presents some natural space for growth.

CONCLUSION

Portugal has a long maritime past, a beautiful coast and a rich submerged cultural heritage. The history of the country's maritime past is studied but not divulged at a popular, international level, mostly when we think about the 15th and 16th centuries scientific advancements, the rise of anthropology, the discovery of the planet, the development of botany, chemistry, zoology, philosophy, and the profound changes the Iberian navigations triggered in European culture.

Archaeology, and specifically nautical archaeology, can help us understand our past and our long and sometimes forgotten relation with the sea, and the study of the shipwrecks in our coasts, compounded with the study of Portuguese shipwrecks around the world, can be the core of a long term cultural strategy in which the submerged cultural heritage can be the foundation of a series of learning environments for schools, high schools and universities, and a relevant touristic attraction.

In summary, computers can be at the core of this strategy, for a number of relevant reasons:

1. The submerged cultural heritage (SCH) is invisible and 3D modeling can make it visible to a wide audience;
2. Digital video and photogrammetry can help monitor and protect sites preserved *in situ*;
3. Shipwrecks are not stable archaeological sites (looting, treasure hunting, economic development, trawling, natural disasters) and digital recordings can preserve their image forever;
4. Digital archaeological sites can be scaled, sliced, tagged — augmented reality — and shared online, serving as interactive learning environments and as the base for international research;
5. Tridimensional renderings can be layered and decompress the time enclosed within, for instance with animations of changing landscapes, architectures, or site formation processes.

Computers and computer science are changing archaeology, making it easier, cheaper, plural, and offering the possibility to establish didactic and community archaeology projects with low budgets.

It is plausible to assume that Autonomous Underwater Vehicles (AUVs) will become cheaper, carry better payloads, have increased autonomy, and will be easier to deploy. Sub-bottom profiling will evolve in the next decades to create the underwater equivalent to CT scanning, and multi-beam sonar will generate cheaper and better images, and

these tools will make it easier and cheaper for state and local agencies to survey the bottoms along the coasts and rivers of the entire country and establish an hierarchy of sites needing protection, palliative care, recording, study, or even intrusive interventions.

It seems that, more than ever, what we need is leadership, a participated and democratic model in which the role of the state will be facilitating and regulating, and the work left to the municipalities in cooperation with museums, universities, dive clubs, and the Navy.

EDITED SOURCES

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