

Introducción a la Arquitectura Naval I

*Especialización en Patrimonio Cultural Sumergido
Bogotá, April 2019*



Part 1 - Introduction

Filipe Castro



Guidance for Students I



Nautical Archaeology Program



TEXAS A&M
UNIVERSITY

1

The first advice we give our students is that it is paramount that they know **the field**:

How are things working worldwide? What is the future looking like?

How is nautical archaeology evolving?

Which are the best journals?

Which are the most relevant international meetings?

The most active international organizations?

The trends? There are more non-western archaeologists every year!

What are the fashionable narratives?

The role of the media?

The perceived social value of archaeology?



2

The second is about the **job market**:

What skills are in demand, and are likely to be in five years for:

What is the market looking for right now?

What will the job market look like in five years?

The academic world

Contract archaeology

Museums

State research centers

State offices



3

The third is about **knowledge**. Theoretical, practical, intellectual ambition, a taste for literature, the arts, cinema, music, politics, food...

Common sense: an idea of what is a life worth living.

Socrates

You cannot be neutral on a moving train.

Howard Zinn

Do they read? Are they curious?

Are they interested in the world?



4

The forth is about **practical** skills: know your software!

ArcGIS, AutoCAD, Rhinoceros, AutoDesk Maya, Houdini,
Computer vision software...

Diving

Mapping

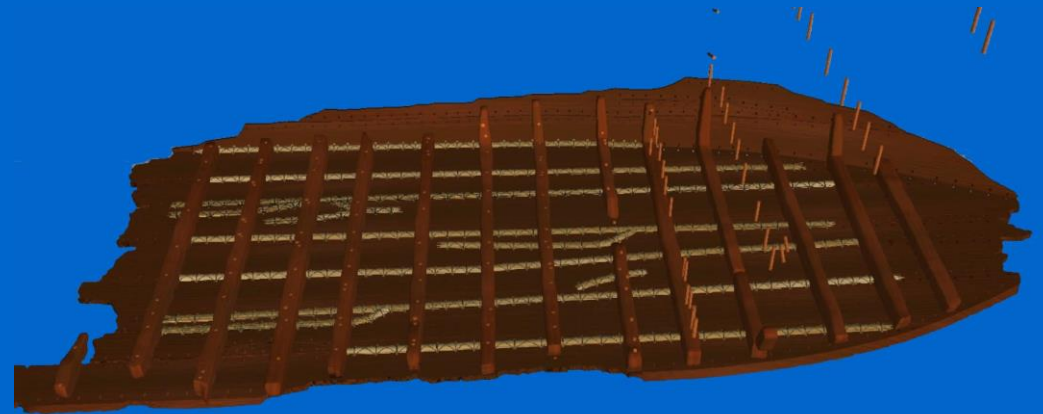
Operating remote sensing equipment



5

The fifth is **citizenship**: activism.

If you don't stand for anything, don't have any intellectual ambitions, don't understand why social justice is important, that knowledge is more important than money, if you don't care about diversity, the environment, and the future of the planet... go study finance! There is a place for you in Wall Street.



Students must be the
directors of their lives, not
mere actors!



Guidance for Students II



Notes from John
McDermott's
*Philosophical
Pedagogy* classes

Nautical Archaeology Program



TEXAS A&M
UNIVERSITY

Professional Ethos

Classes have a texture.

Be a good listener.

Urban, Patient, Tolerant, and Collegial.

Grades don't matter.

Conduct

Never emulate anybody. An intellectual life is not a job.
It is a vocation. Authenticity is your only option.

Don't be a burden. Better be an understatement.

Never pander. Never sell out. Study and search out
yourself.

Peer Help

Seek the faculty that have a conciliatory remark.

Look for people that know where you are and can tell you.

How to read a Syllabus

A syllabus is a grid: inside should be life.

It should be an invitation to a dinner with friends, and classes should be like dinner parties.

Teaching is about healing, growing, helping. If your life goes bad, let the teachers know and expect them to help you.

A syllabus must be friendly: attendance is not required but it is necessary.

Syllabi have been politicized – university administrators don't trust faculty and don't like students.

Professional codes are repressive.

Training is often about telling us not to do horrible things: their premise is that without training we would do despicable things!

Rules prevent tragedies but enforce mediocrity.

Ambition

Students must choose instead of accept knowledge. They are not empty vessels where teachers pour knowledge.

Ideology is not inquiry.

Today's world doesn't value memory. Nobody wants to study medieval philosophy. We live in a society with single lines. There are no texts. Who would read *The Magic Mountain* today?

There is too much to learn: teachers can show how much students should learn and how, but they cannot demand too much. Burdened students don't learn.

Students must be intellectually ambitious!!

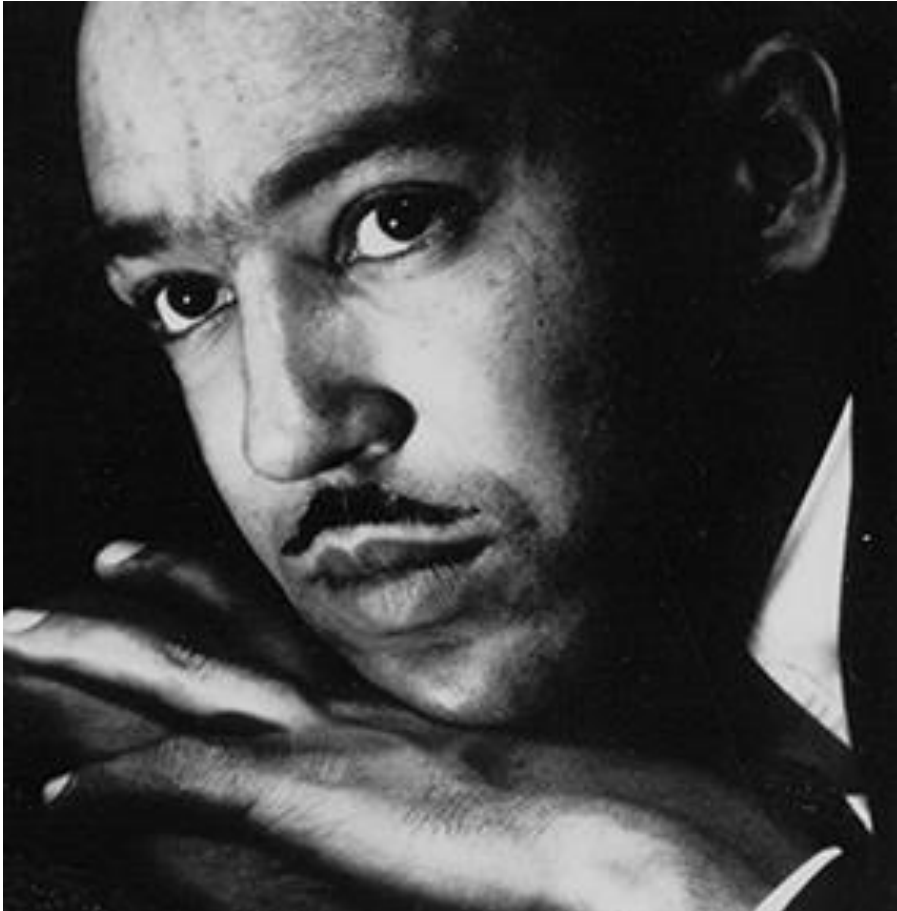
Competitiveness

Hierarchy is the opposite of community.

Avoid competition: a learning community is the opposite of a competitive environment.

Teams are more powerful than individuals.

Alone you will all loose.



Harlem

BY LANGSTON HUGHES

What happens to a dream deferred?

Does it dry up

like a raisin in the sun?

Or fester like a sore—

And then run?

Does it stink like rotten meat?

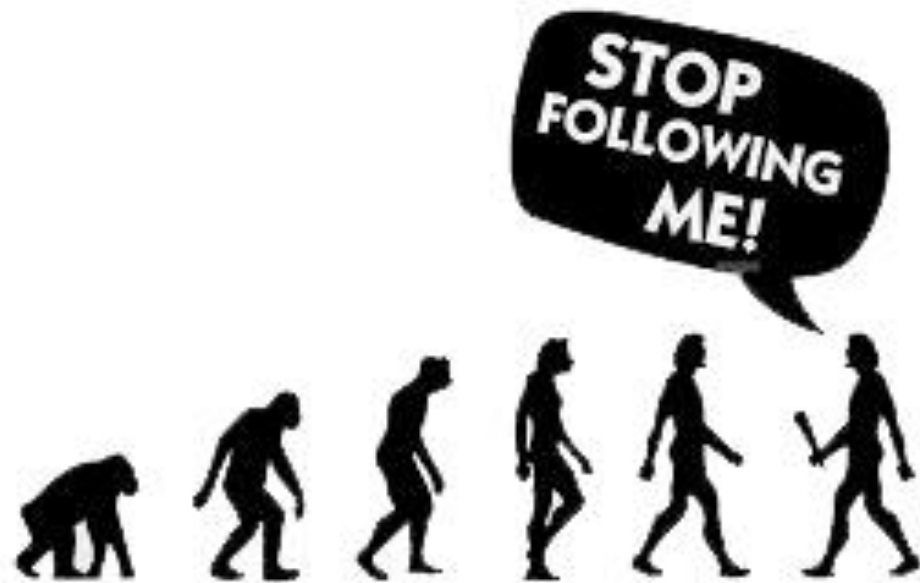
Or crust and sugar over—

like a syrupy sweet?

Maybe it just sags

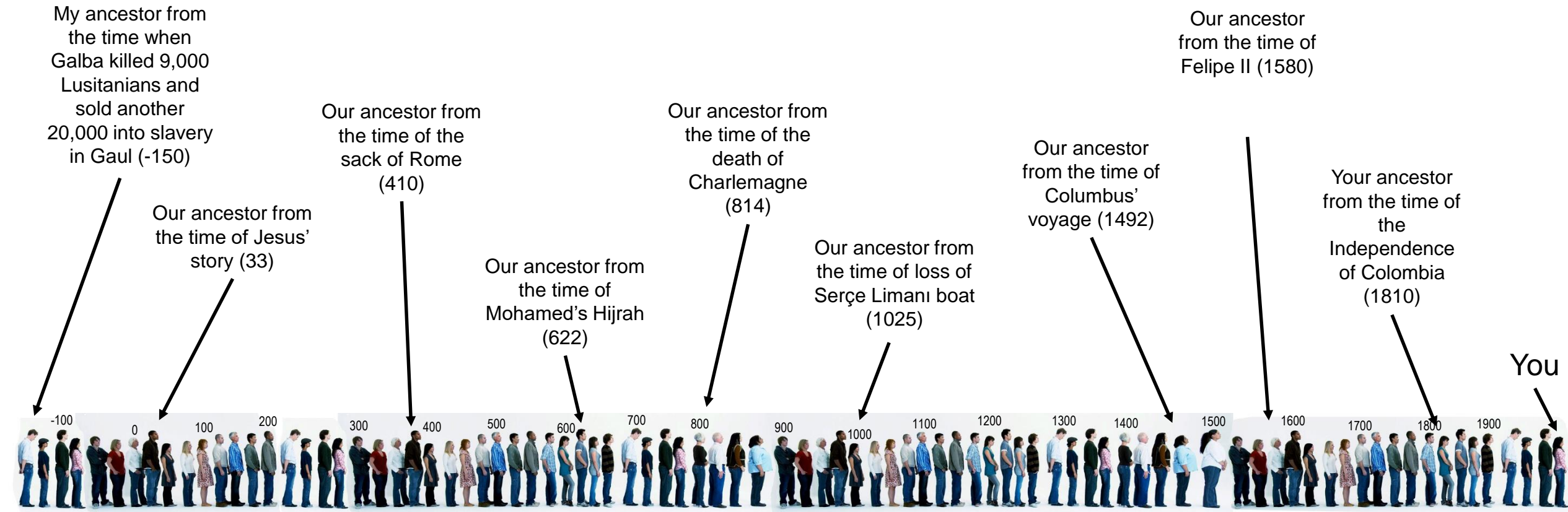
like a heavy load.

Or does it explode?



It is impossible to run away from the past.

It is impossible to understand the present without understanding the past. There is an historical continuity that is important to understand.

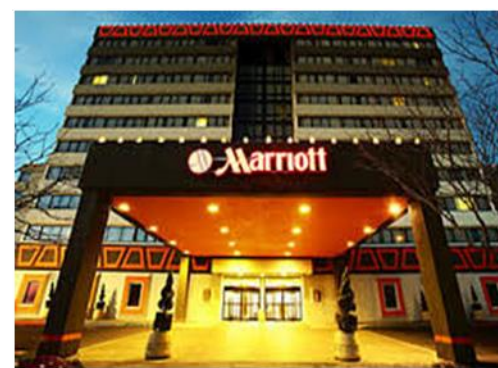




Artifacts are eloquent.
Historical accounts
don't get near.

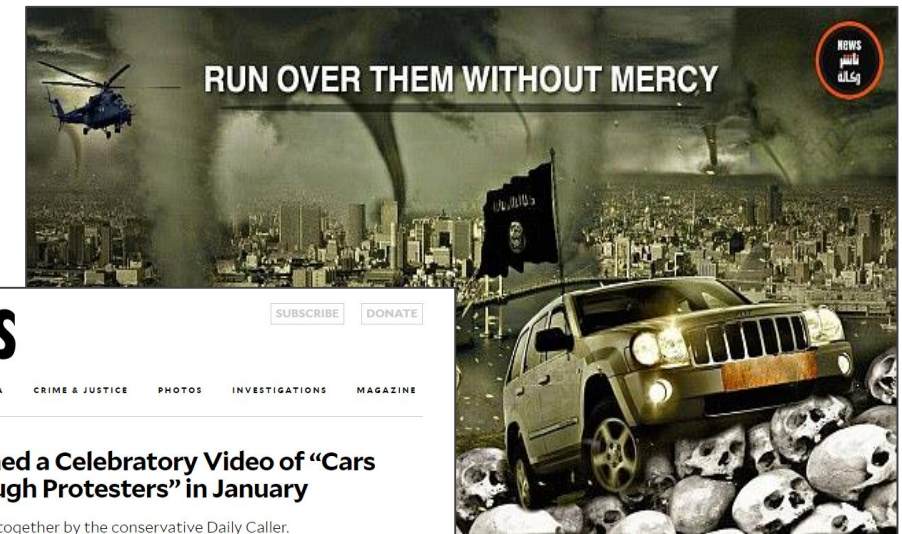
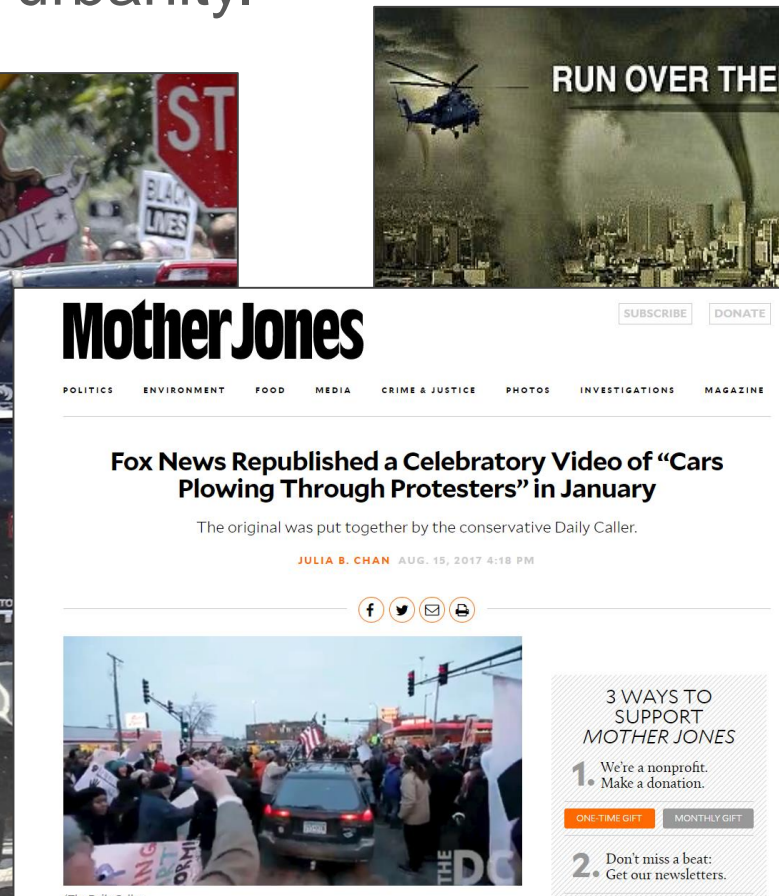
Few themes are more relevant today than the diversity of the past, when we consider the plurality of possibilities of the future.

Stephanie Koerner, 2010. (& Ian Russel, eds.) *Unquiet Past*. Farnham, UK: Ashgate



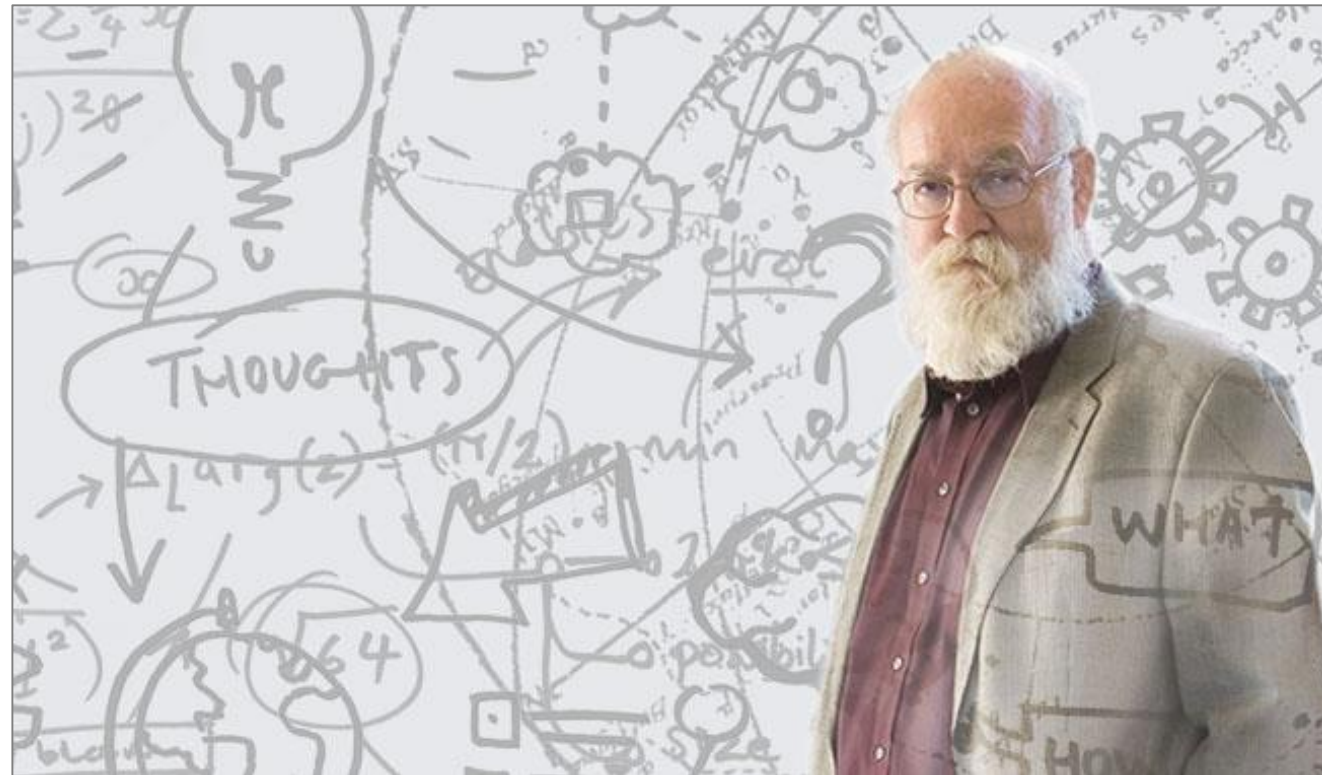
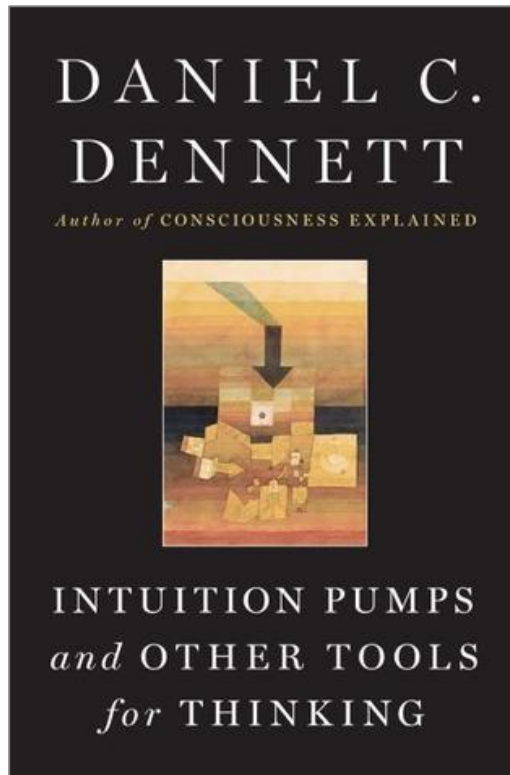
Capitalism is a leveling force that makes the world homogenous, and destroys cultures and ways of living.

Democracy and peace require the acceptance a plurality of opinions and worldviews, based on education and urbanity.



As in Vico's 'public grounds of truth,' as in Vico, Giambattista, 1744. *Principi di scienza nuova*. Napoli: Stamperia Muziana, p. 772.

Archaeology provides us with thinking tools! The “apps that we upload to our necktops” and allow us to think better and faster: stories, expressions, signs, numbers, graphics, images, maps, narratives...



Society is an organism that cannot survive without intellectuals.



The cultural heritage is a source of self-esteem and peace of mind.
It provides anchors in people's lives.

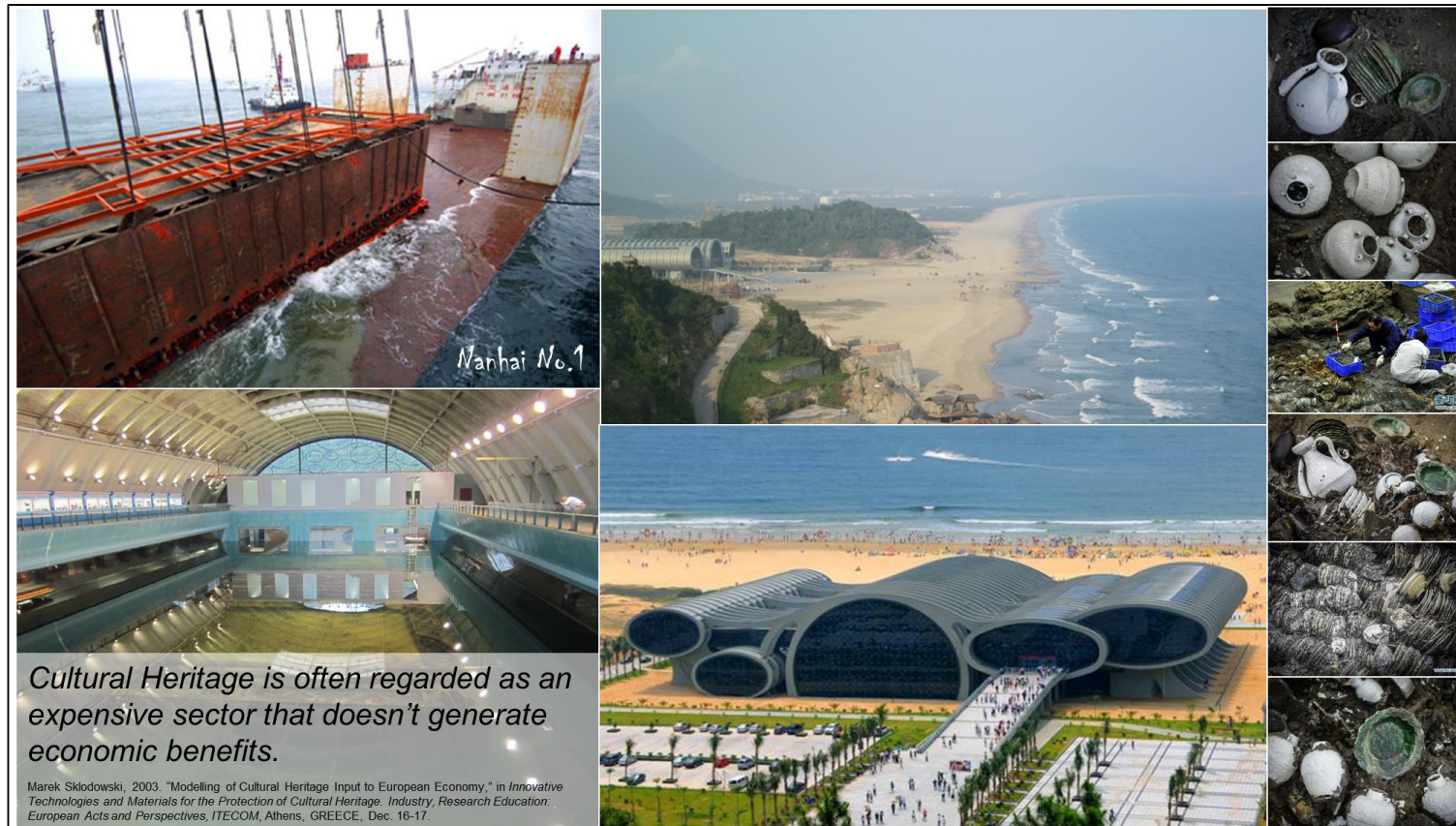
Garry Momber



Parthenon, Nashville, Tennessee.

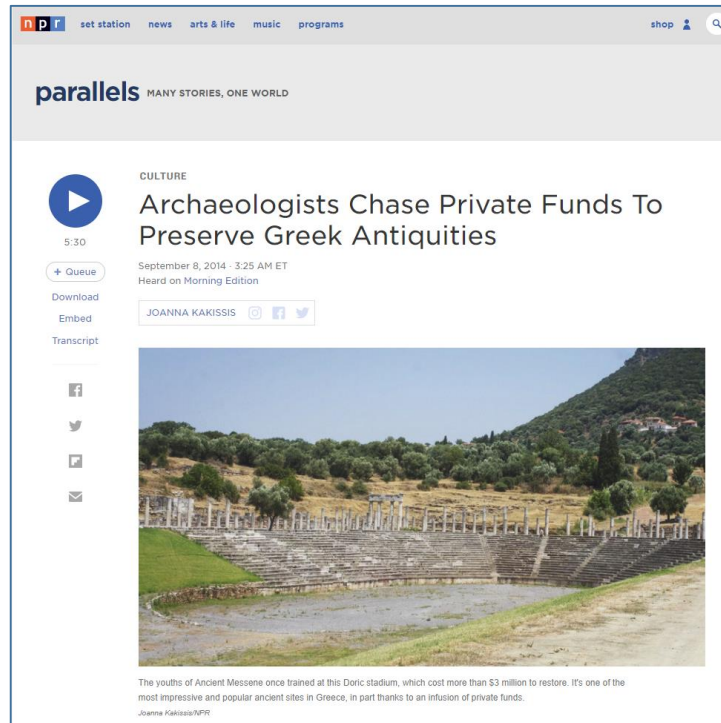
Should taxpayers fund 'common good' causes?

The problem is that the study, preservation, curation, and divulgation of the cultural heritage cost money.



Should taxpayers fund 'common good' causes?

Public money is not abundant in today's western cultural world. The social value of archaeology is often questioned.



“Archaeological finds delay work on tram line No. 28”

Subsidies for museums, libraries, orchestras, theatres, cinema, conservation of monuments, etc., are also questioned. But the biggest problem is that investigate police is underfunded and small, white collar crooks are not prosecuted.

Should taxpayers fund 'common good' causes?

From the 1970s onwards, political lobbying for “small government” in the western world empowered a class of extremely wealthy people, not always highly educated.



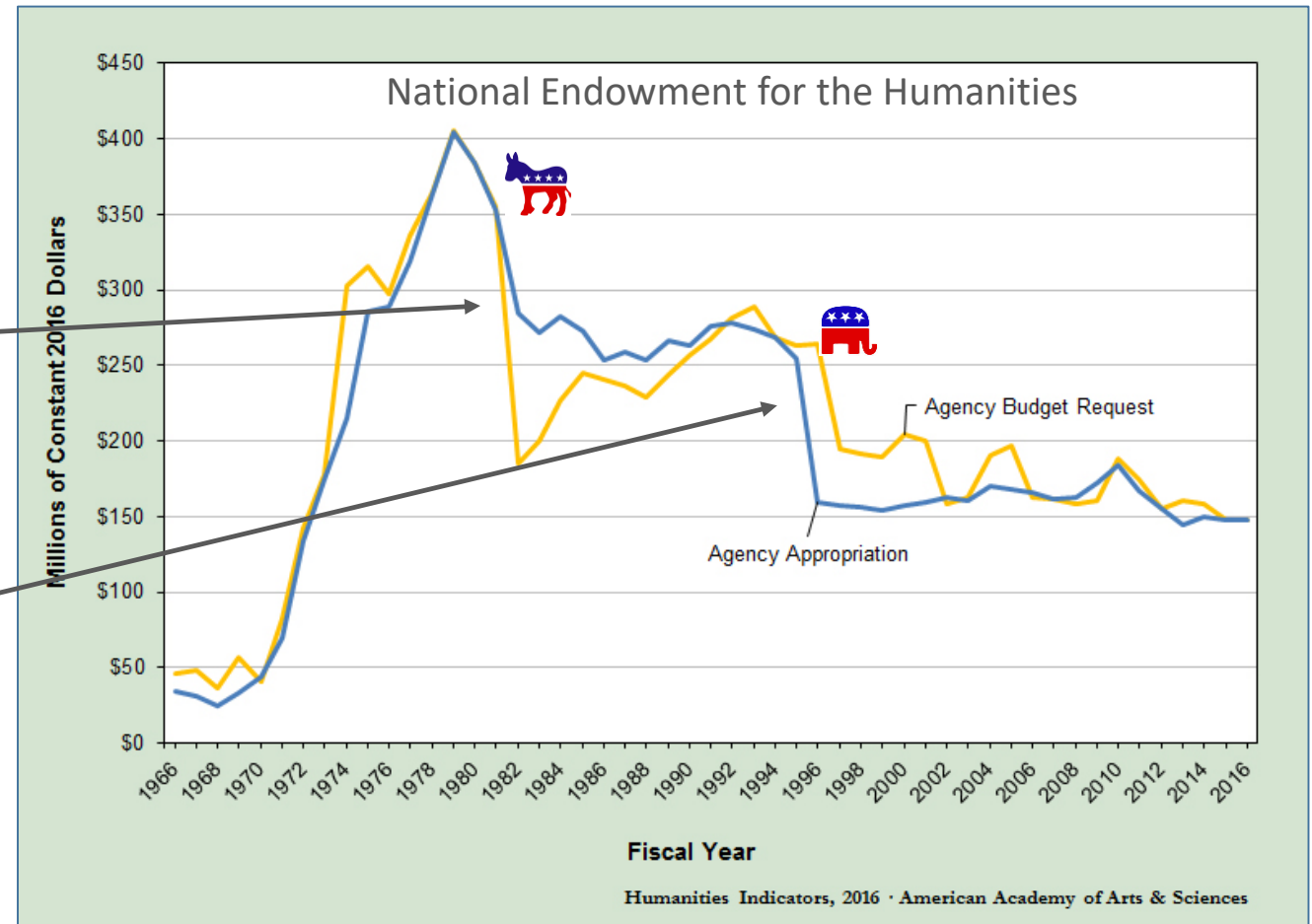
"We don't pay taxes; only the little people pay taxes."

Leona Helmsley

In the US this aversion to public investment in cultural services is consensual and bipartisan.

1976-1980: Carter and an all democratic congress.

1995-1997: the 104th Congress (Trent Lott and Newt Gingrich) dealt a major blow to the NEH and NEA.



Archaeologists are losing ground and find it increasingly difficult to protect the cultural heritage against the logic of the profit.



Some Europeans still believe that small government and deregulated capitalism offer less individual and social options.

William Osborne, composer, 2004, "Marketplace of Ideas: but first, the Bill," *Arts Journal*.

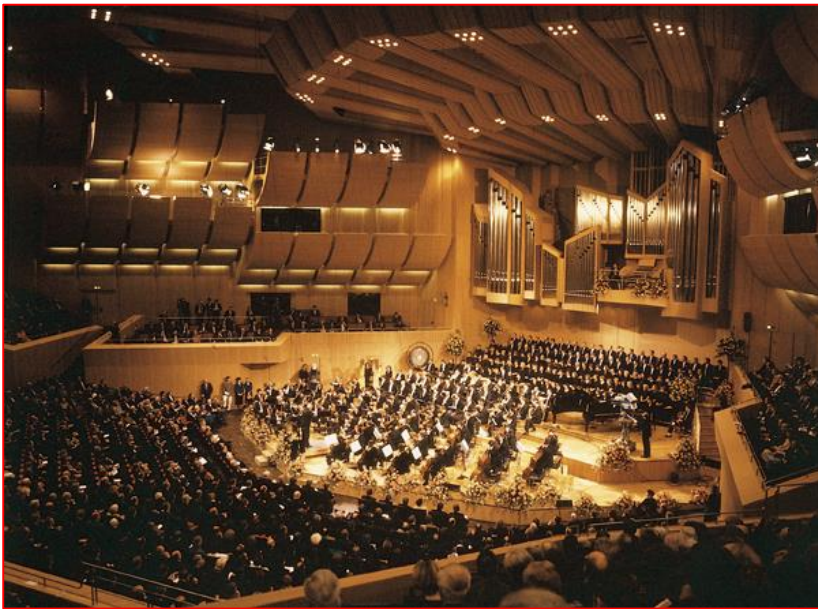


France is famous for its large public projects (left Louvre and right Quai d'Orsay).
This policy has been criticized on an ideological basis, not economic. e.g. Fumaroli vs. Jack Lang.

Should taxpayers fund 'common good' causes?

Taxes: “Germany’s public arts funding (...) 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.”

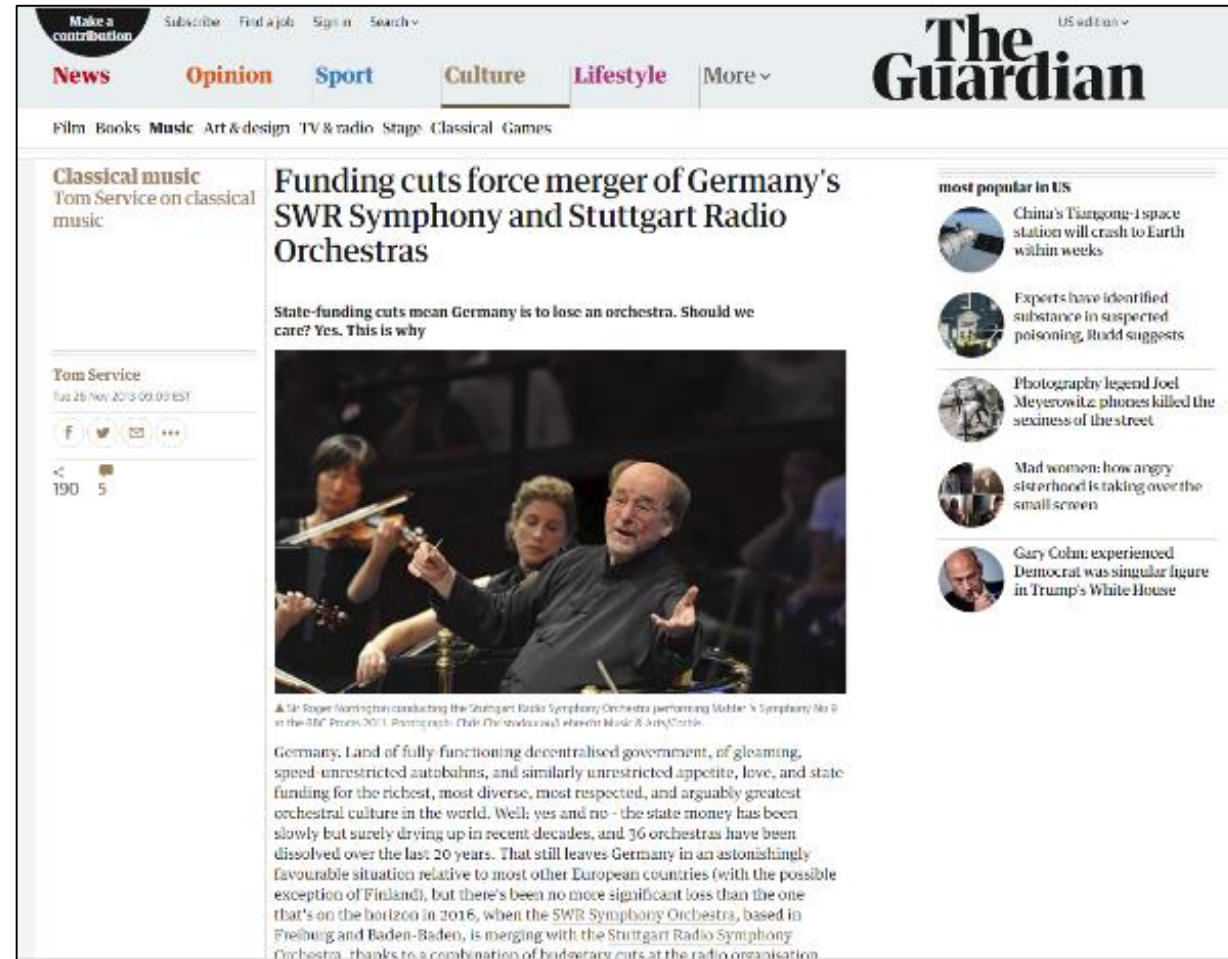
William Osborne, 2004



Democracy problem: the production of one hour of opera may cost more than most people can afford.

Should taxpayers fund 'common good' causes?

But the trend is clear:



The effect of these policies in countries like Portugal, Spain, or Colombia has been devastating.

Should taxpayers fund 'common good' causes?

This situation is not a consequence of economic crisis. In 2019 the population is almost 5 times that of 1900 (1.6 billion), but the planet's GDP about 32 times higher.



The building on the left is now a restaurant: it was moved aside and rotated 90°.

Should taxpayers fund 'common good' causes?

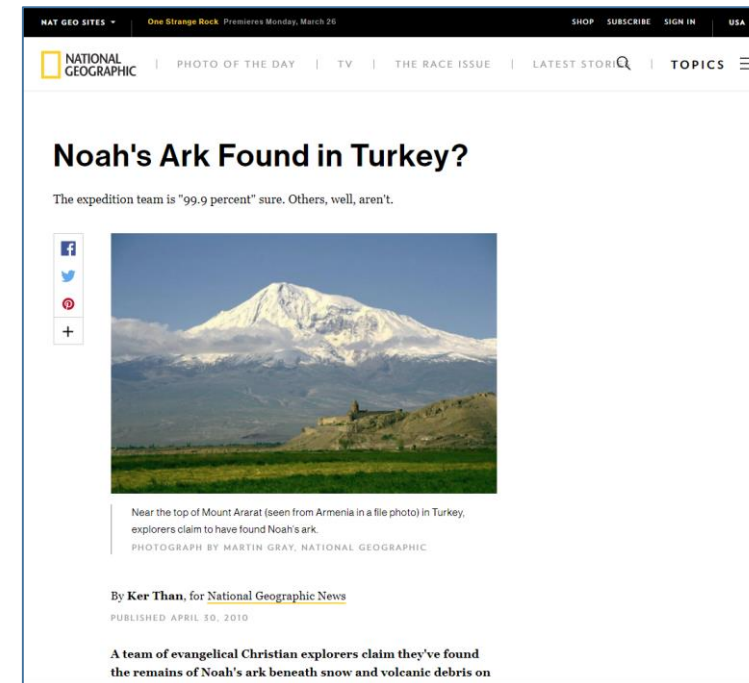
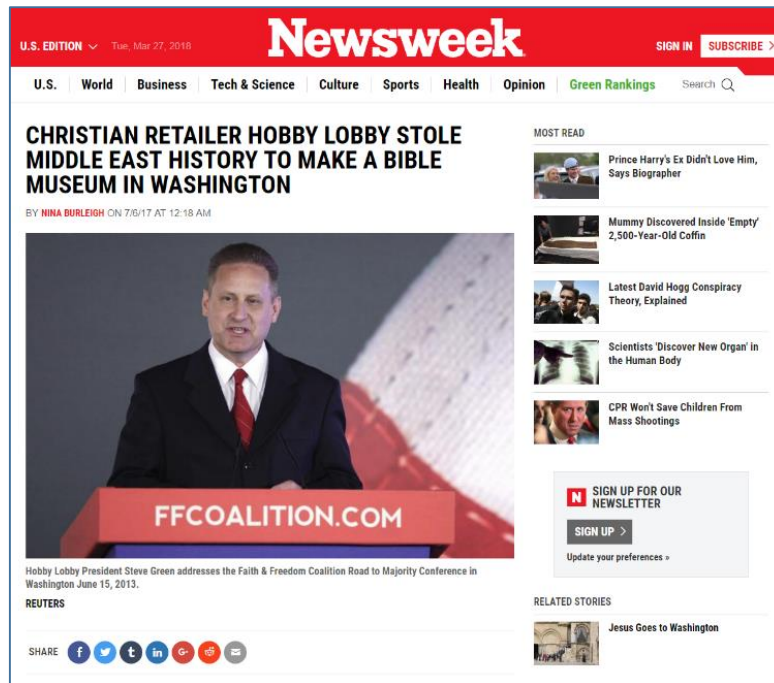
In this political context the ruling class establishes the priorities, and archaeologists must explain the social value of archaeology if they are to compete for public funding.



Police is always underfunded and lacks means to control the cultural heritage.

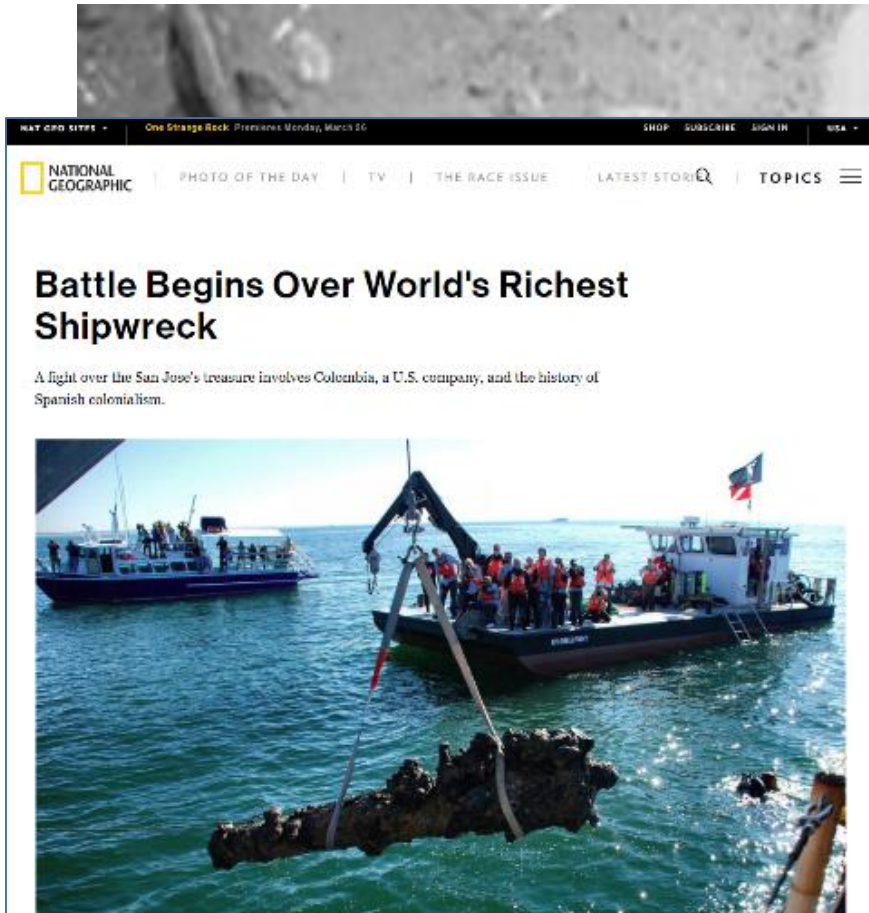
Should 'common good' causes depend on patron's interests?

The alternative is to beg for private money, but in this situation patrons, not archaeologists, define the research priorities.



Should the cultural heritage be privatized?

In some countries archaeologists are still fighting for legislation to protect the cultural heritage against treasure hunting or looting.



The middle class worldwide is the “main consumer” of cultural production: libraries, museums, concert halls, orchestras, opera houses, literary magazines, books, archaeological discoveries, etc.



Outside the US and the EU, middle classes are growing. About 95% of children are in school, and extreme poverty is now at 700 million people, less than 10% of the world population.



The global middle class market is growing slowly in advanced countries and rapidly among emerging market economies

The **middle class** market in the U.S., the Eurozone, and Japan is projected to grow at only 0.5% per year, compared with annual growth of 6% or more in China and India.

0.5%

U.S., EUROZONE & JAPAN

6%

CHINA & INDIA

BROOKINGS

Homi Kharas, 2016. *The Unprecedented Expansion of the Global Middle Class*. Brookings Institution.

It is believed that 88% of the next billion people to enter the middle class will be Asian: 380 million from India, 350 million from China, 210 million from the rest of Asia, 130 million from the rest of the world.



Homi Kharas, 2016. *The Unprecedented Expansion of the Global Middle Class*. Brookings Institution.

What will a non-western archaeology look like?

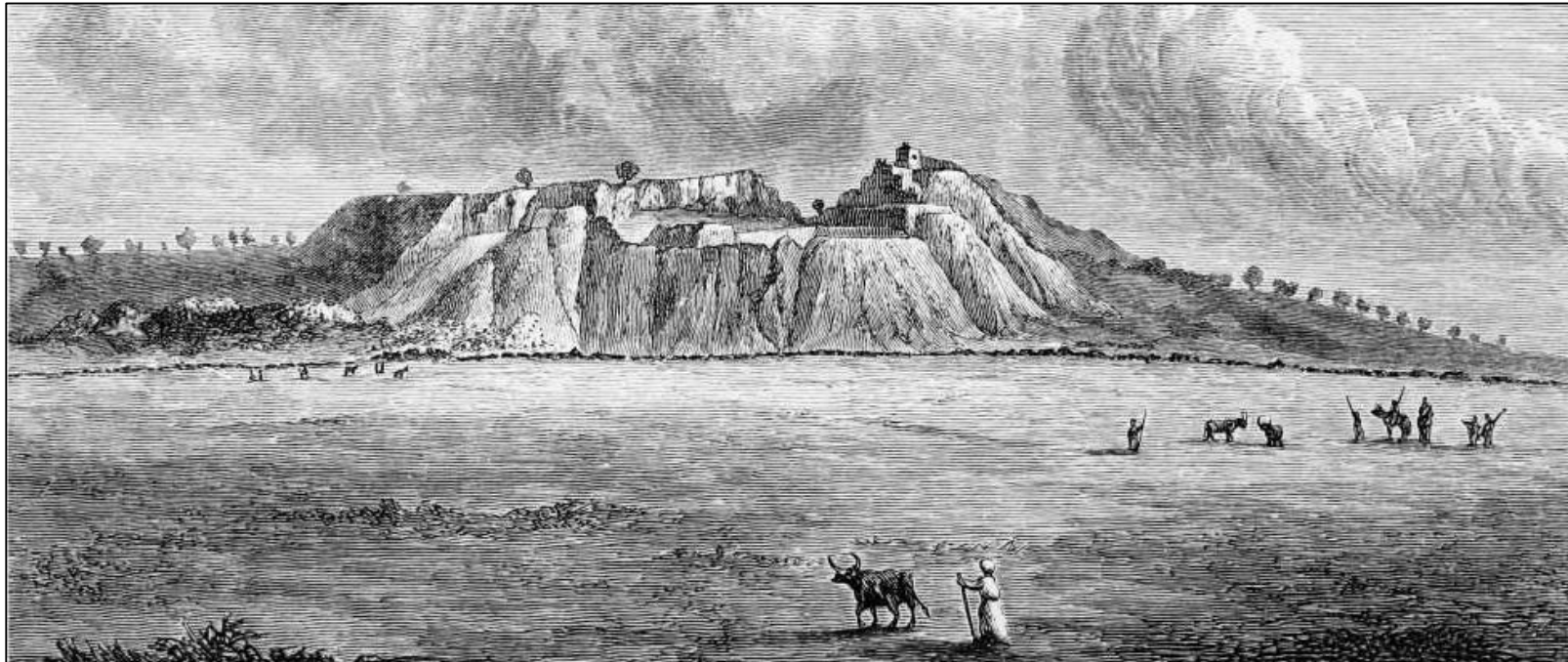
It is likely that as more non-western archaeologists enter the profession, both the questions and the narratives about the past will diversify.



AD 750-800 Phanom-Surin Shipwreck, Thailand (May 2014)

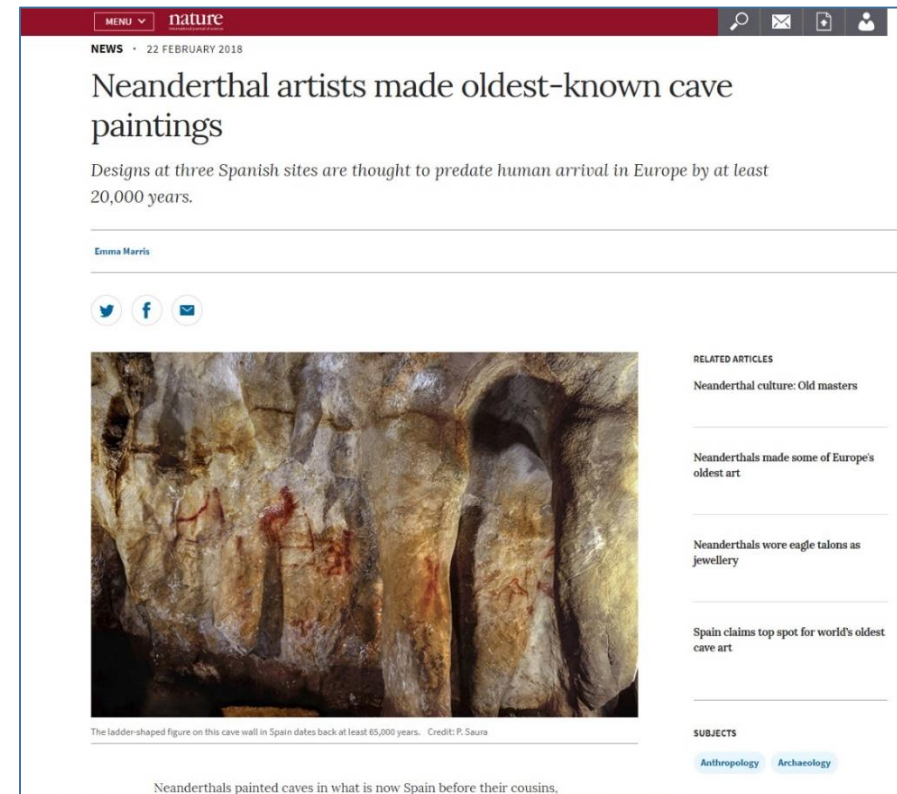
What will a non-western archaeology look like?

Archaeology was born out of the Enlightenment, in a world where mercantilism was being replaced by colonialism and imperialism. Globalization is changing the questions and the narratives constructed and deconstructed by historians and archaeologists.



Moreover, almost 50% of the world population is connected to the internet, and archaeology is attracting public interest.

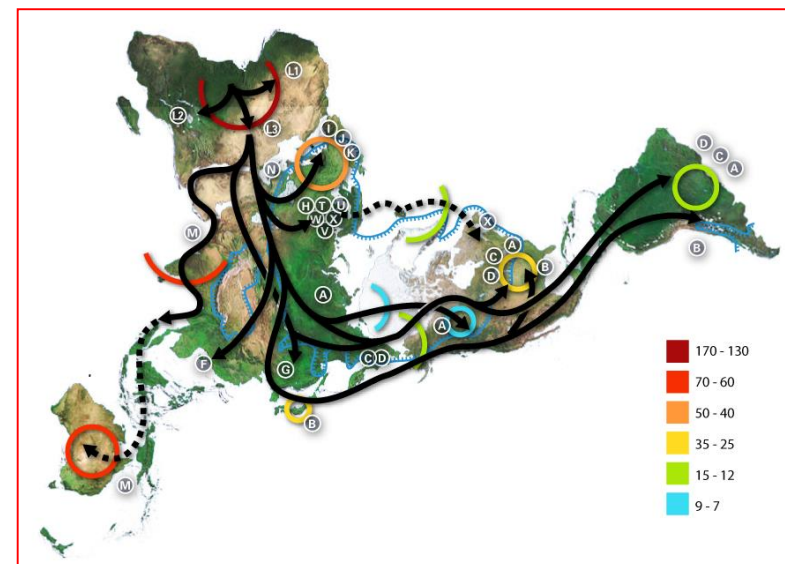
In the 19th century archaeology was a hobby of the western upper class.



What will a non-western archaeology look like?



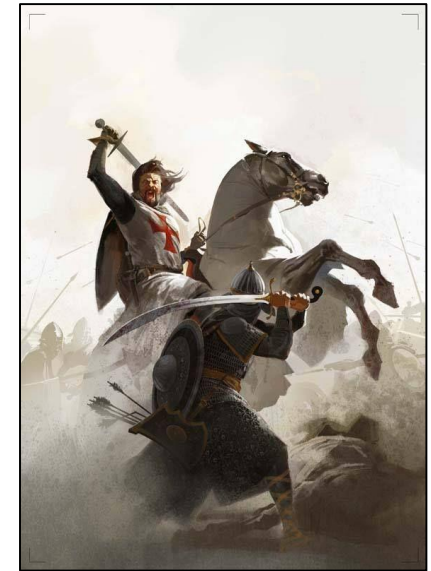
Colonial archaeology (and its narratives) is changing and being replaced by a more cosmopolitan approach to the history of the human adventure.



What will a non-western archaeology look like?

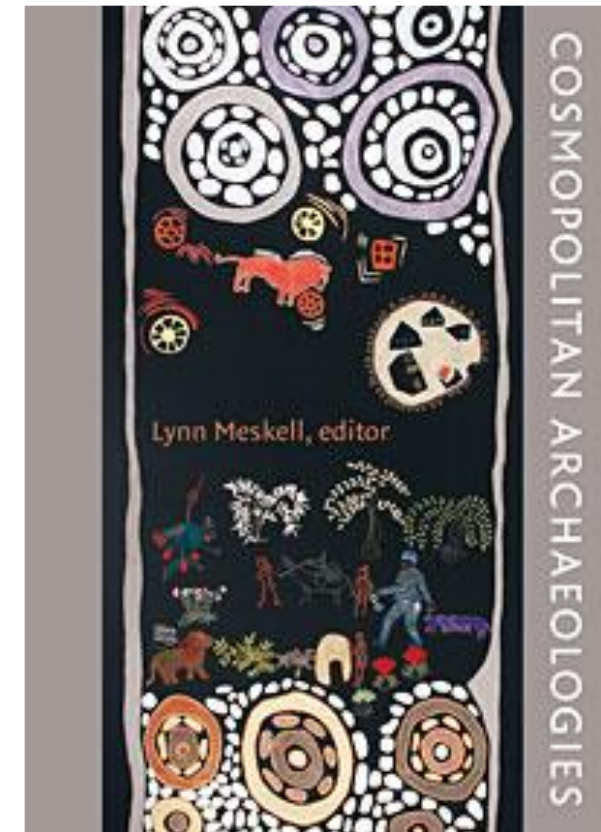


There is still a focus on brutality, power, and conquest (e.g. archaeology of the battlefields), as traditional western history tend to focus on heroism and nationalism.



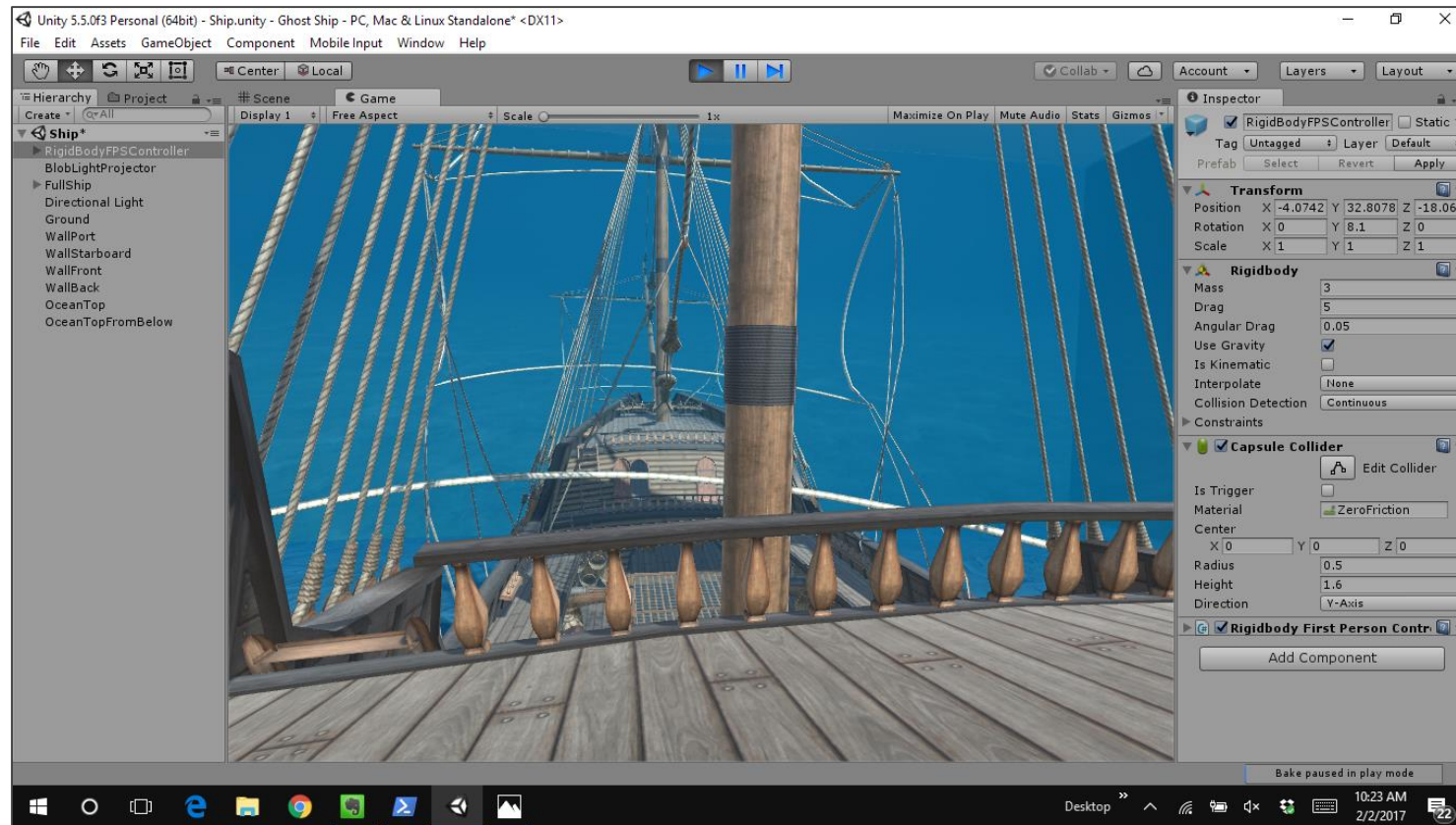
What will a non-western archaeology look like?

Some archaeologists are focusing more on other aspects of life, and less on battles and conquests.



What is the ShipLAB doing?

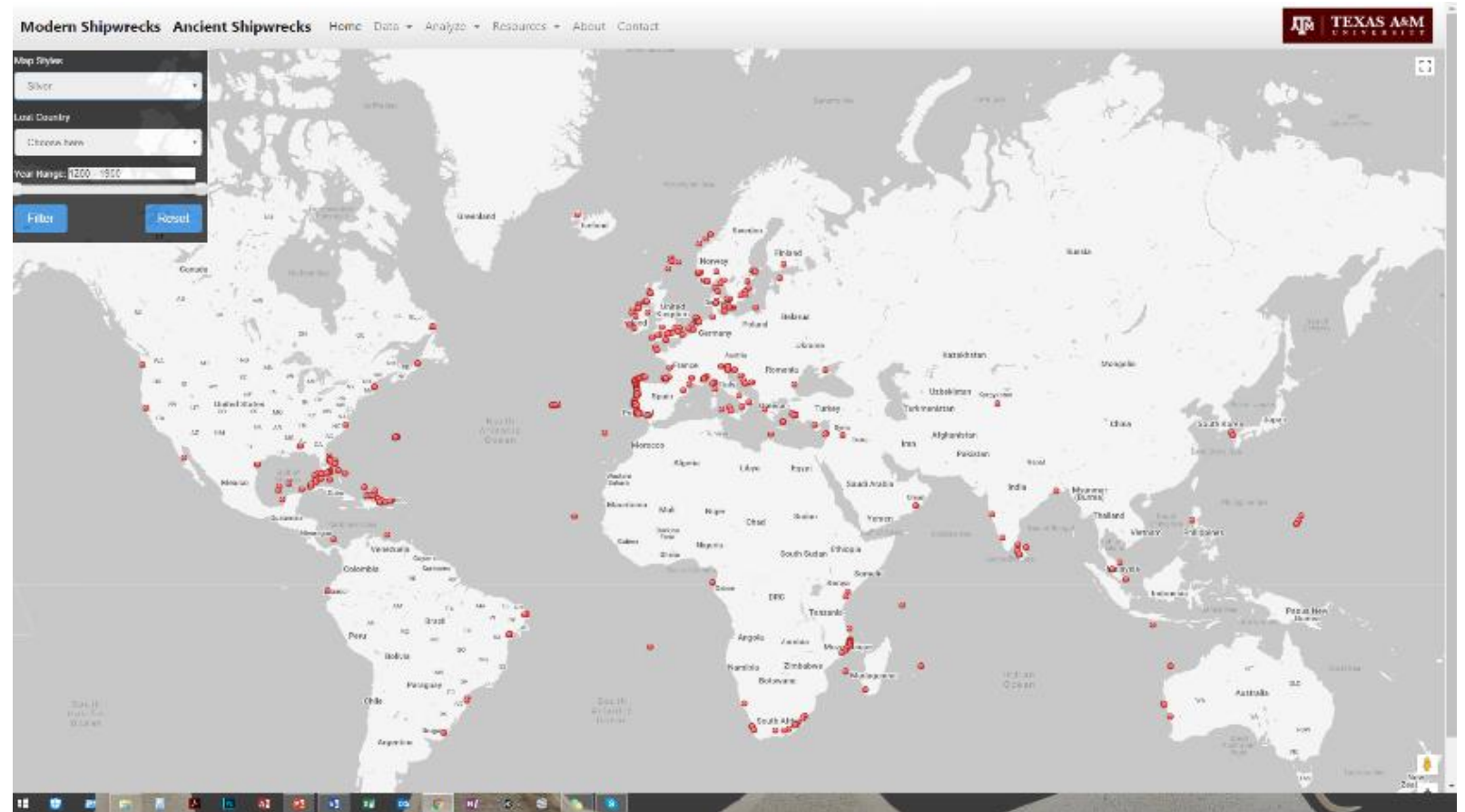
Reaching Out: Community Archaeology, Virtual and Augmented Reality, GIS-based tools, Robotics...



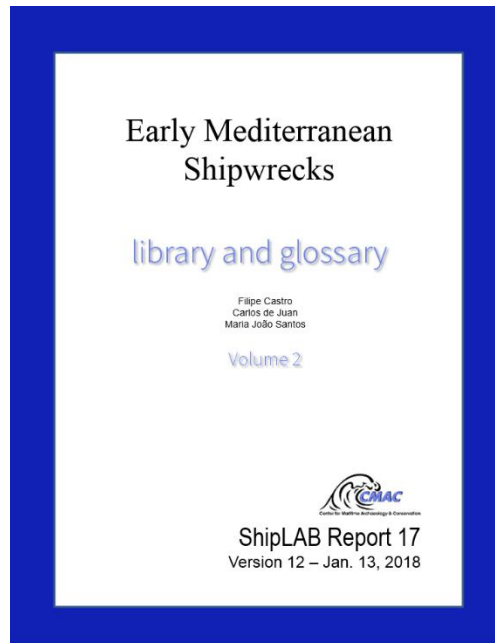
Awdrey Wells

With Cecilia Smith and Rakesh Kumar

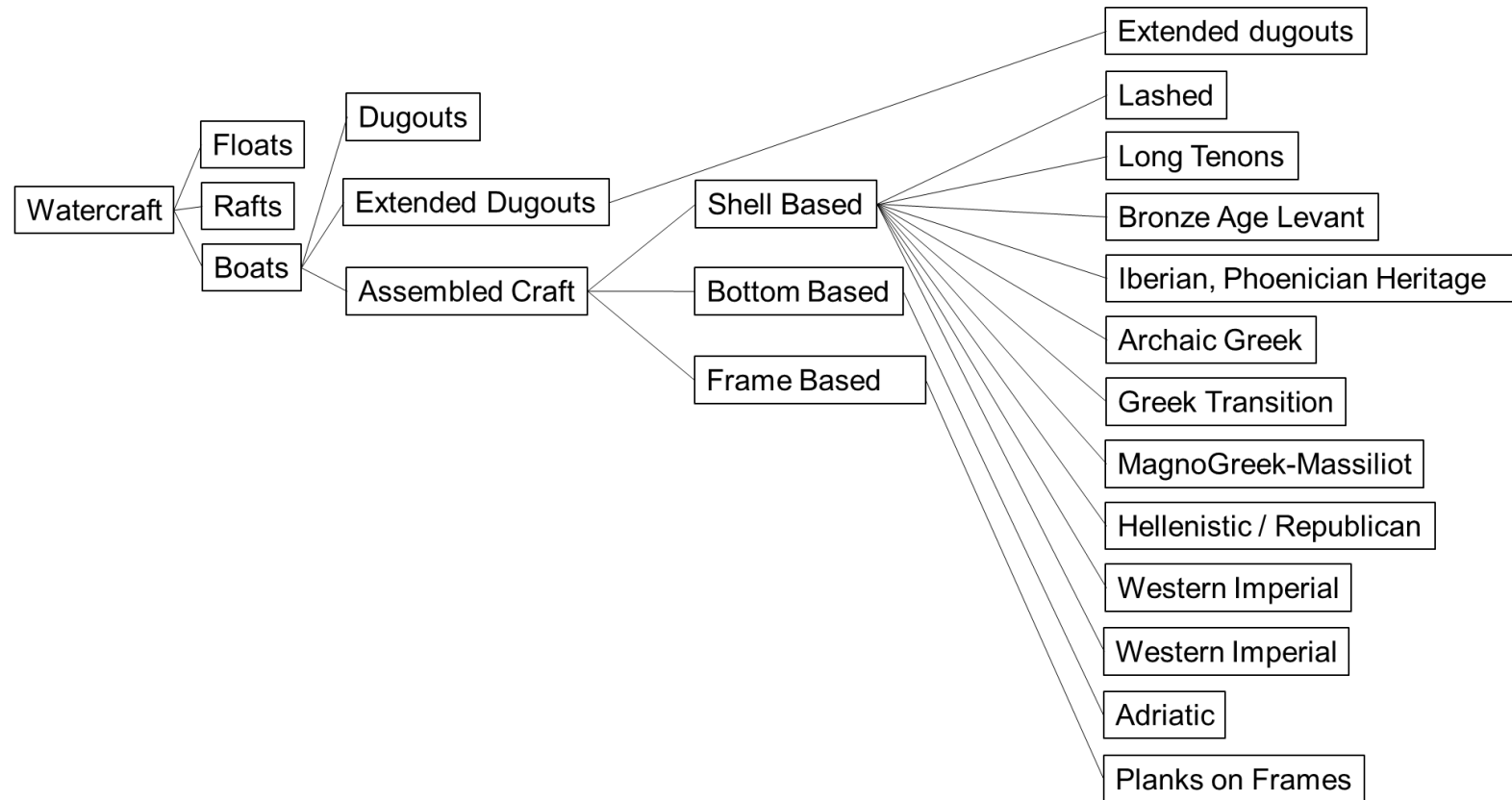
www.modernshipwrecks.com

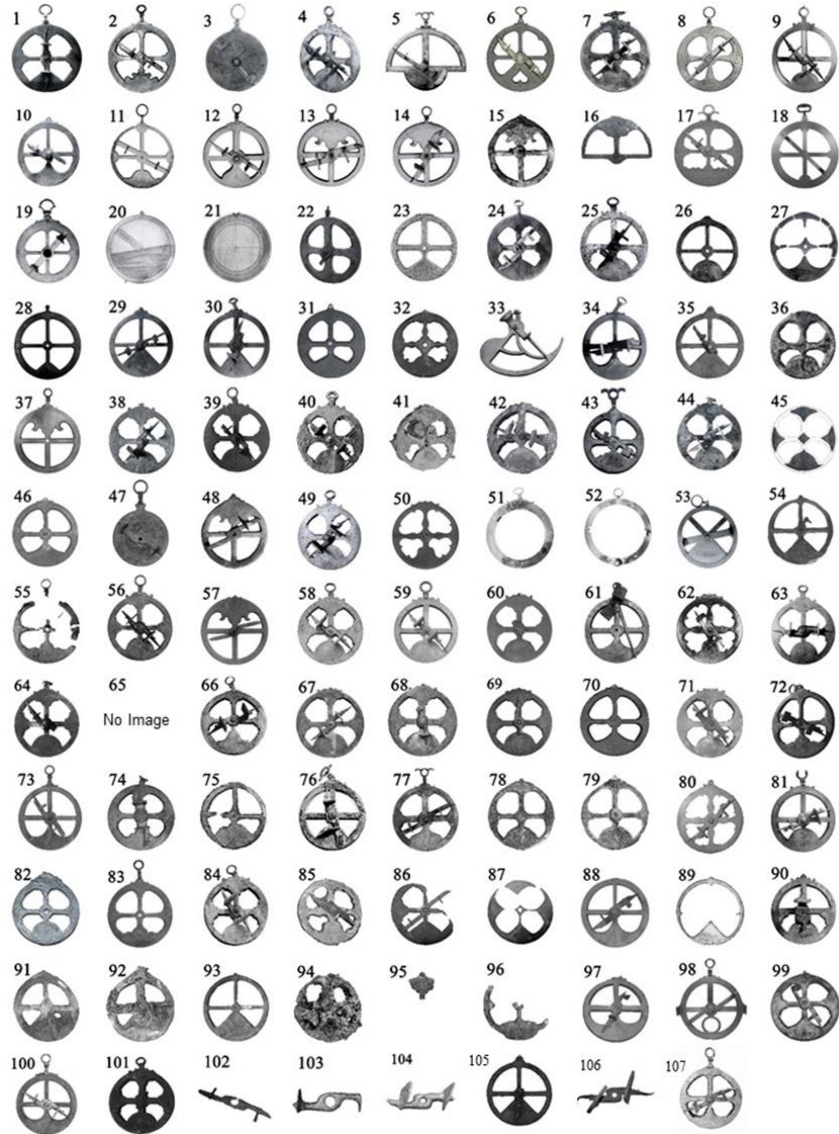


With Carlos de Juan and Maria Santos

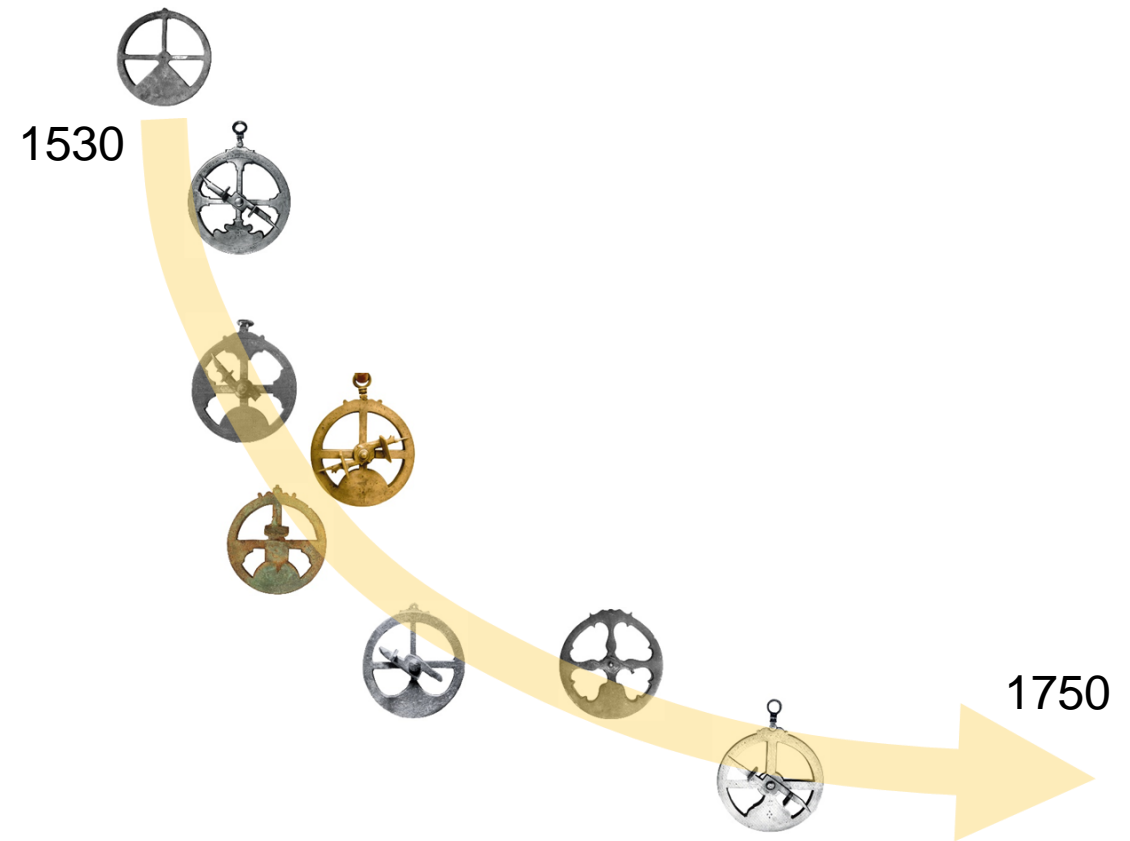


So far 223 shipwrecks
 available @ Academia.edu

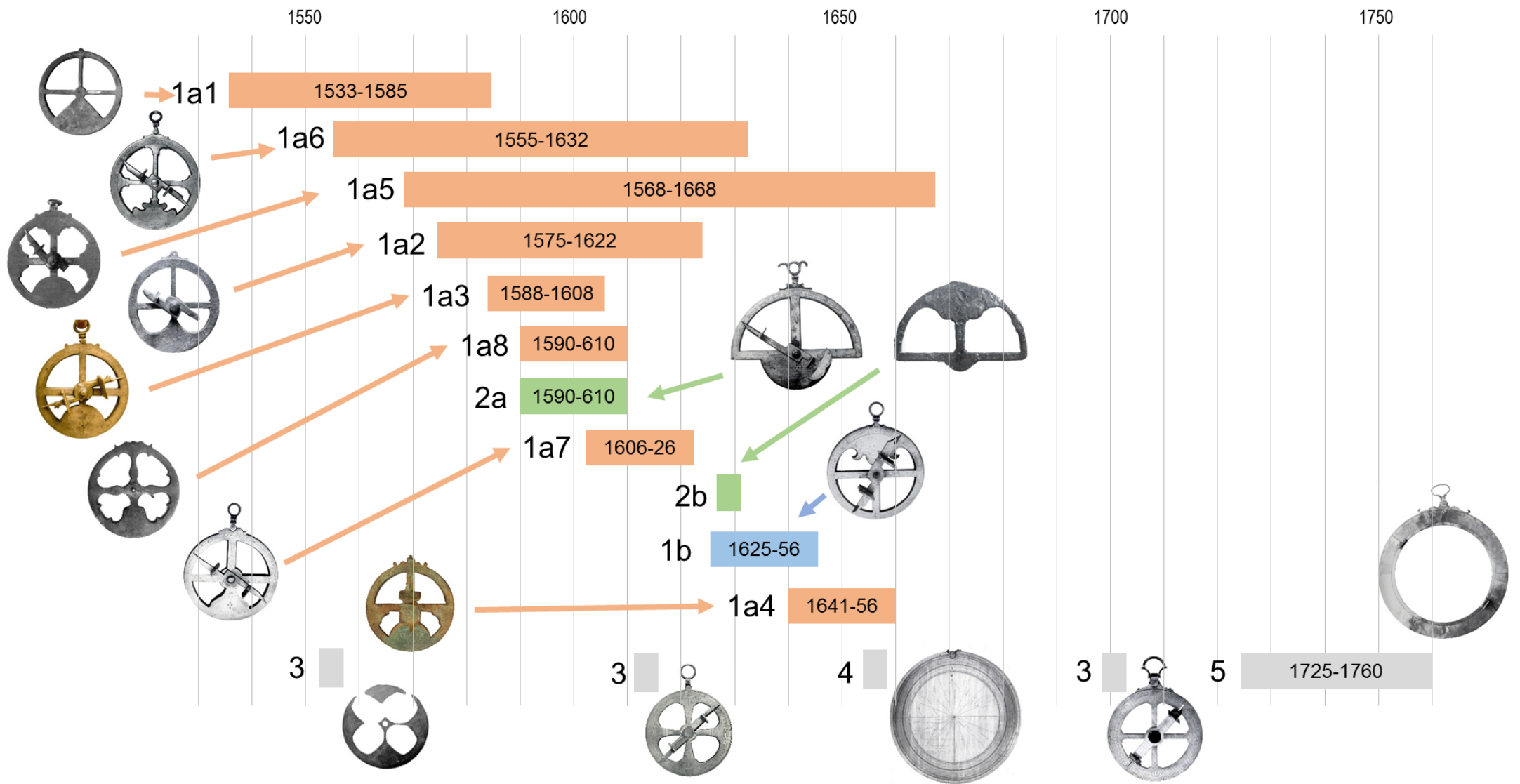


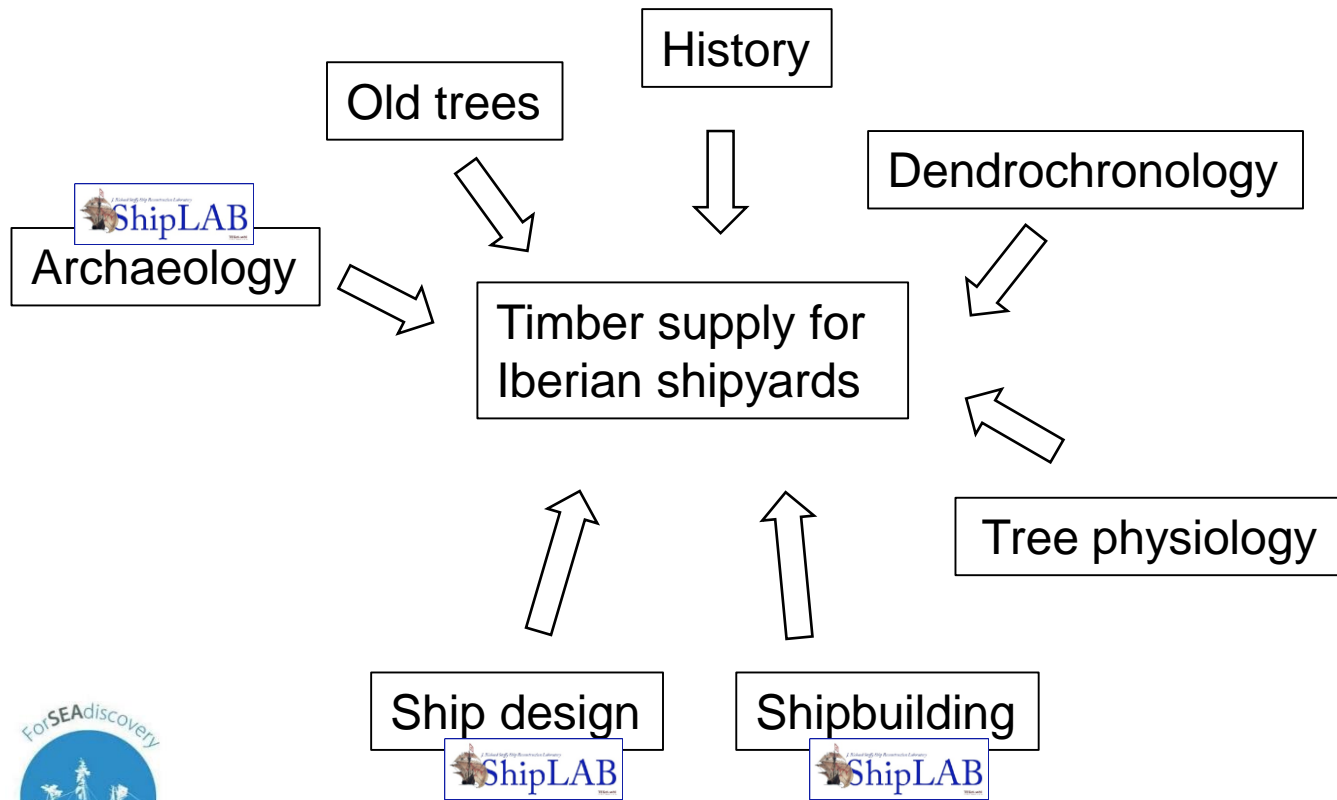


With Nick Budsberg and Jim Jobling



Astrolabe Inventory





Marie Curie Grant
agreement no.: 607545
2014-2018 € 3.9 m

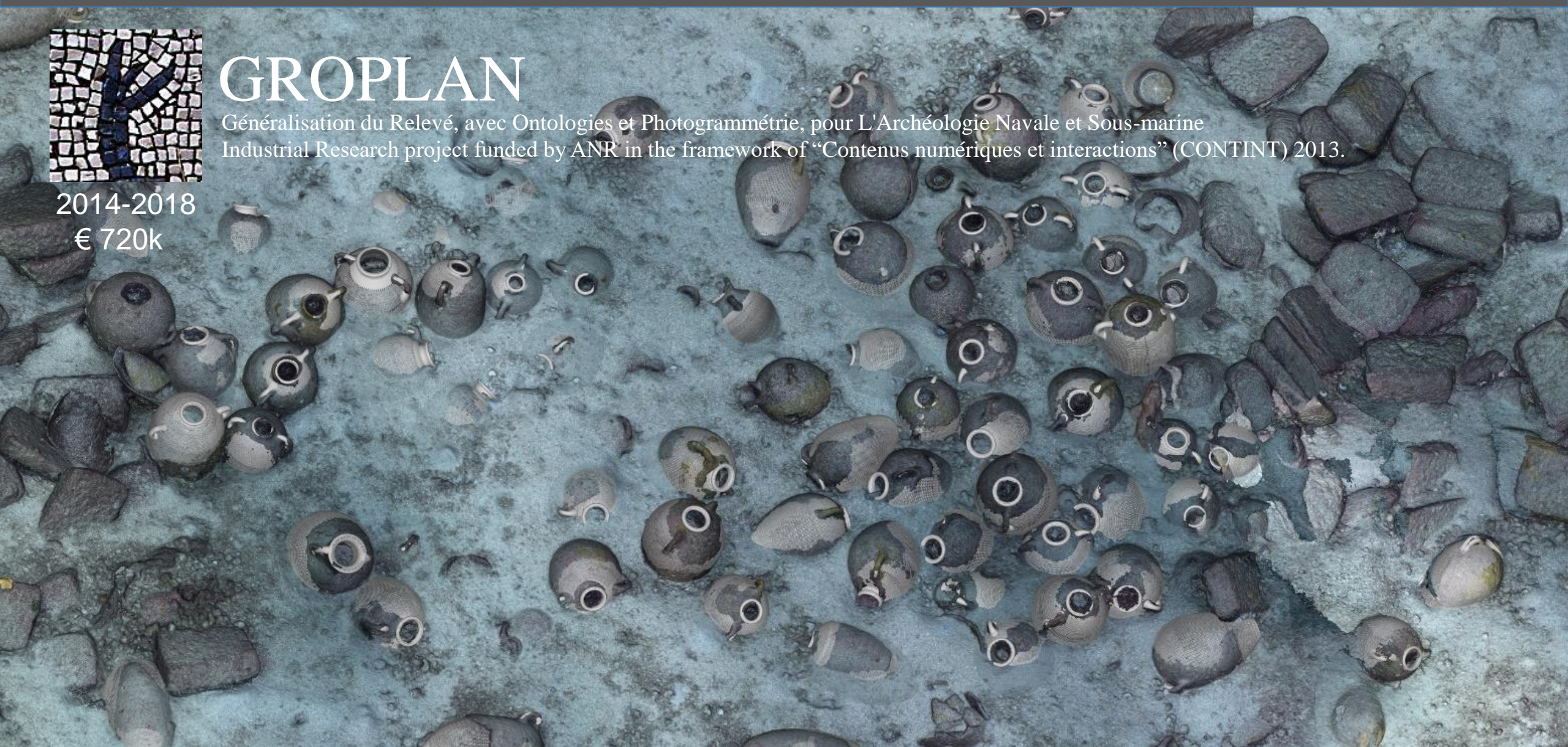


2014-2018

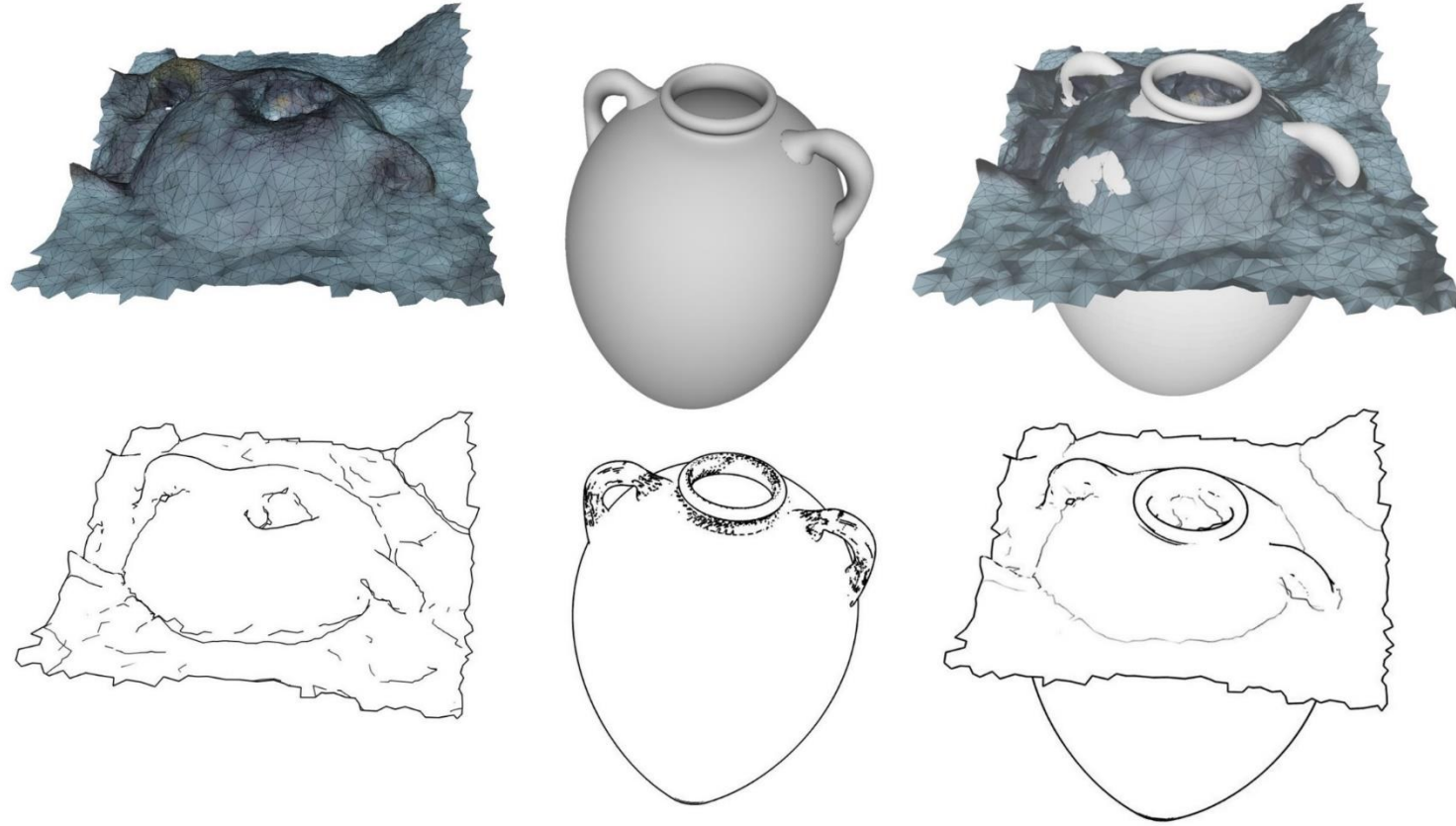
€ 720k

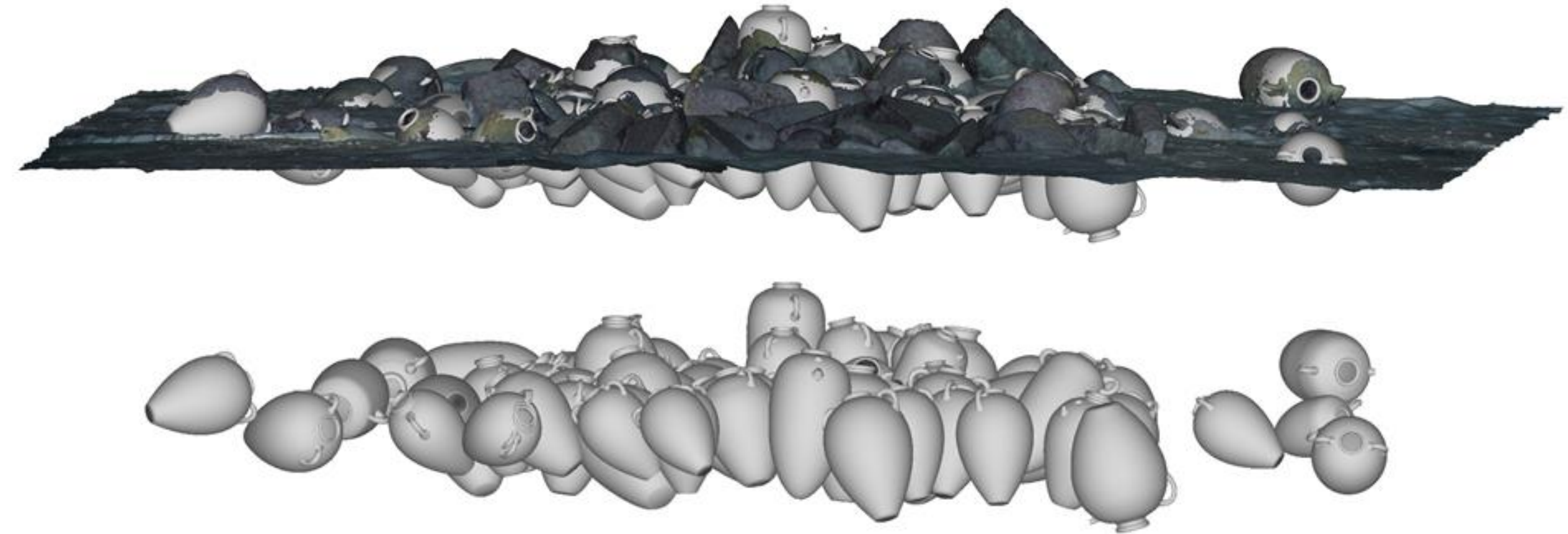
GROPLAN

Généralisation du Relevé, avec Ontologies et Photogrammétrie, pour L'Archéologie Navale et Sous-marine
Industrial Research project funded by ANR in the framework of "Contenus numériques et interactions" (CONTINT) 2013.



Pierre Drap's (CNRS) work on the c. 700-675 BC Xlendi shipwreck, Malta.

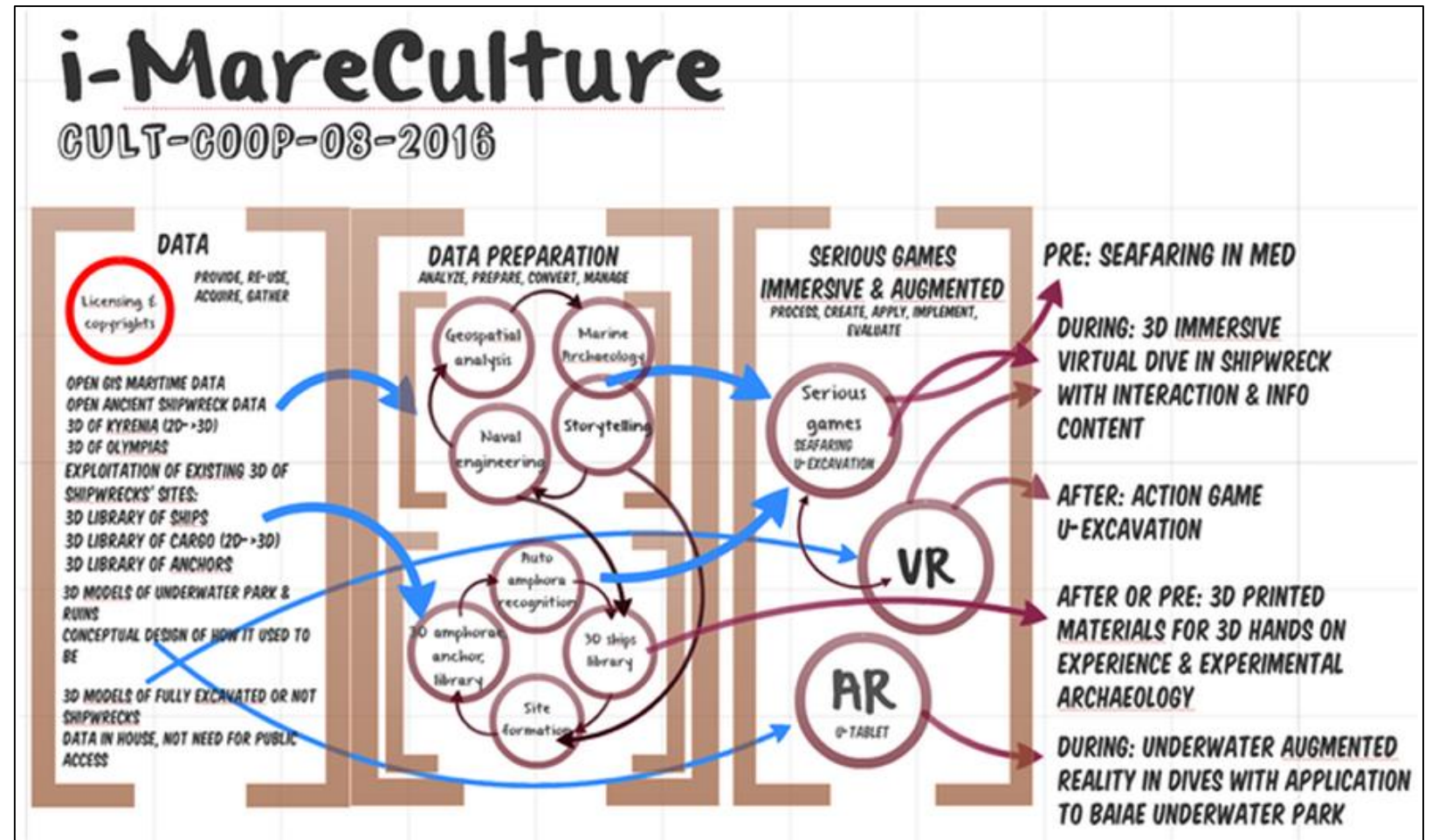


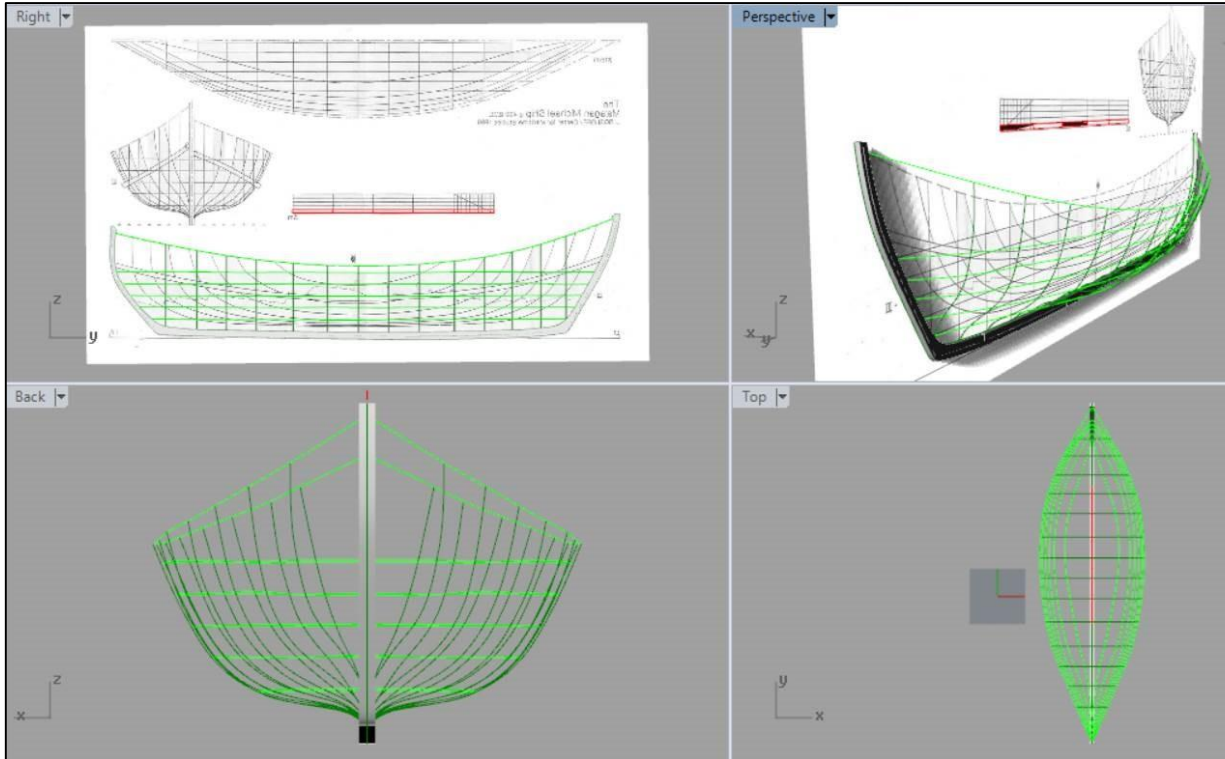


c. 700 BC Xlendi shipwreck, Malta. 15 x 4 m (c. 110 m deep)

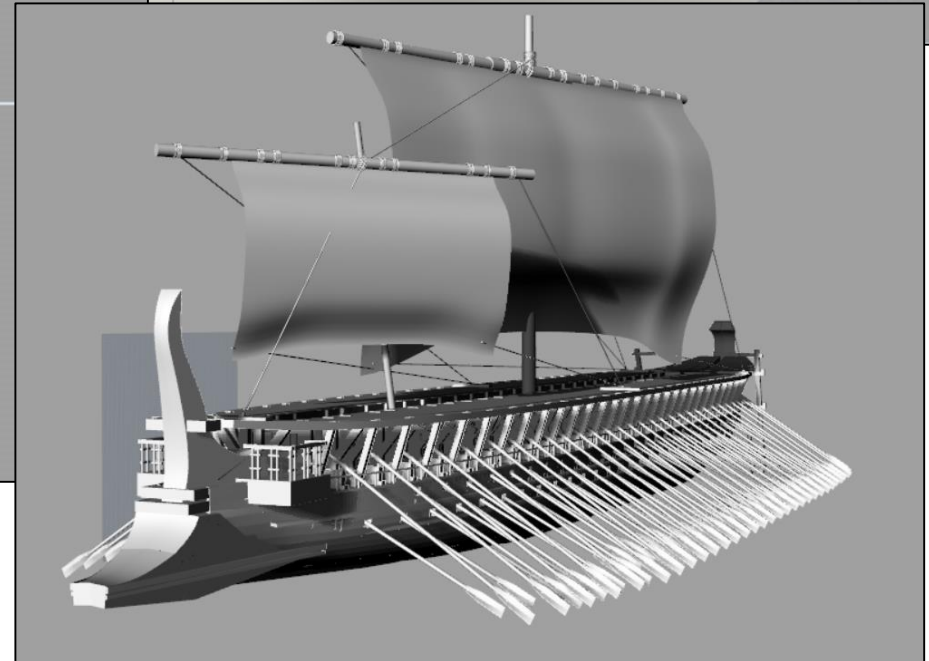
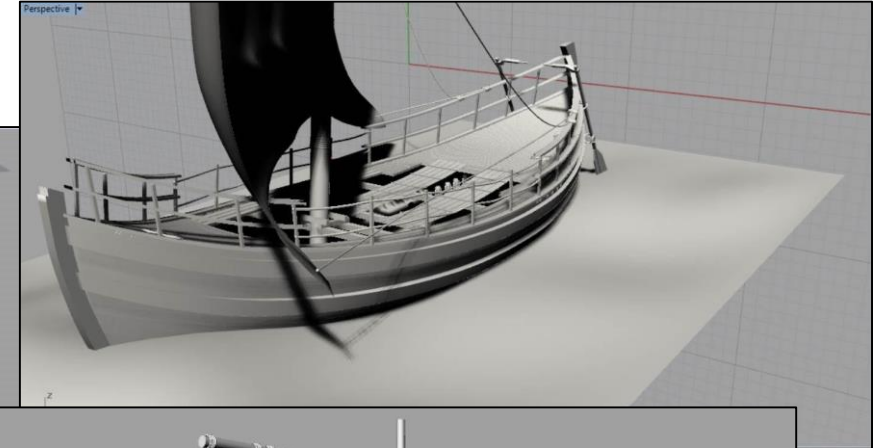


2016-2019
 € 2.7 m





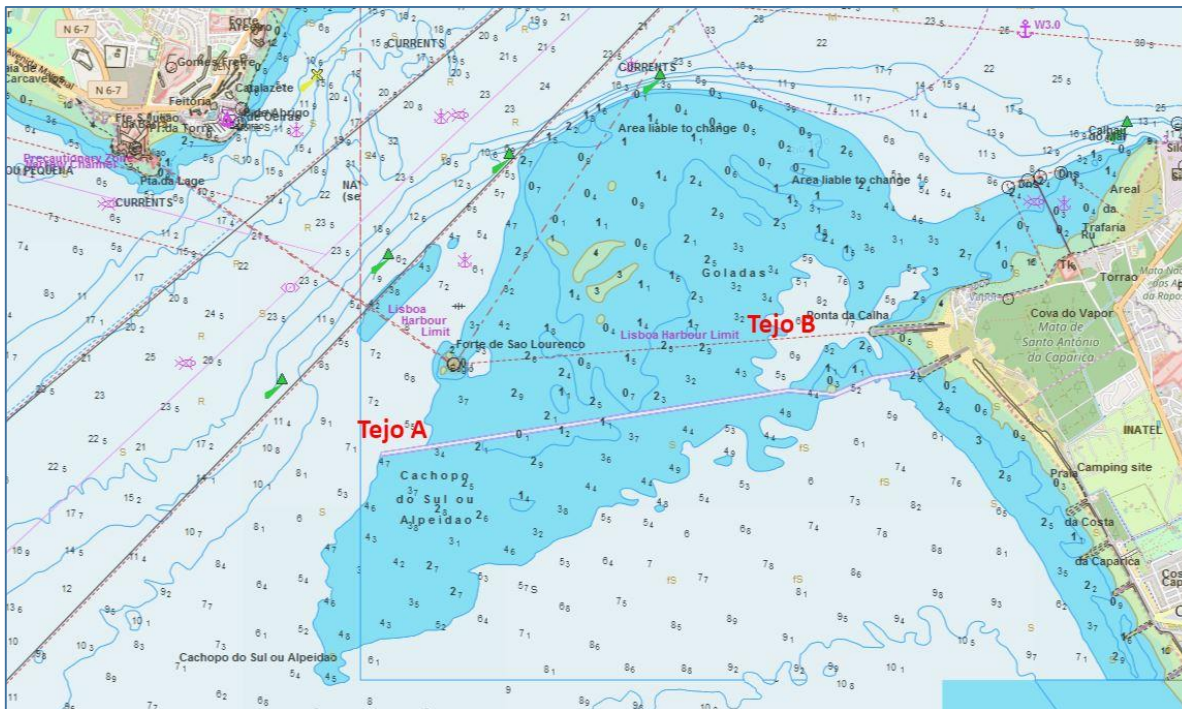
Adolfo Martins



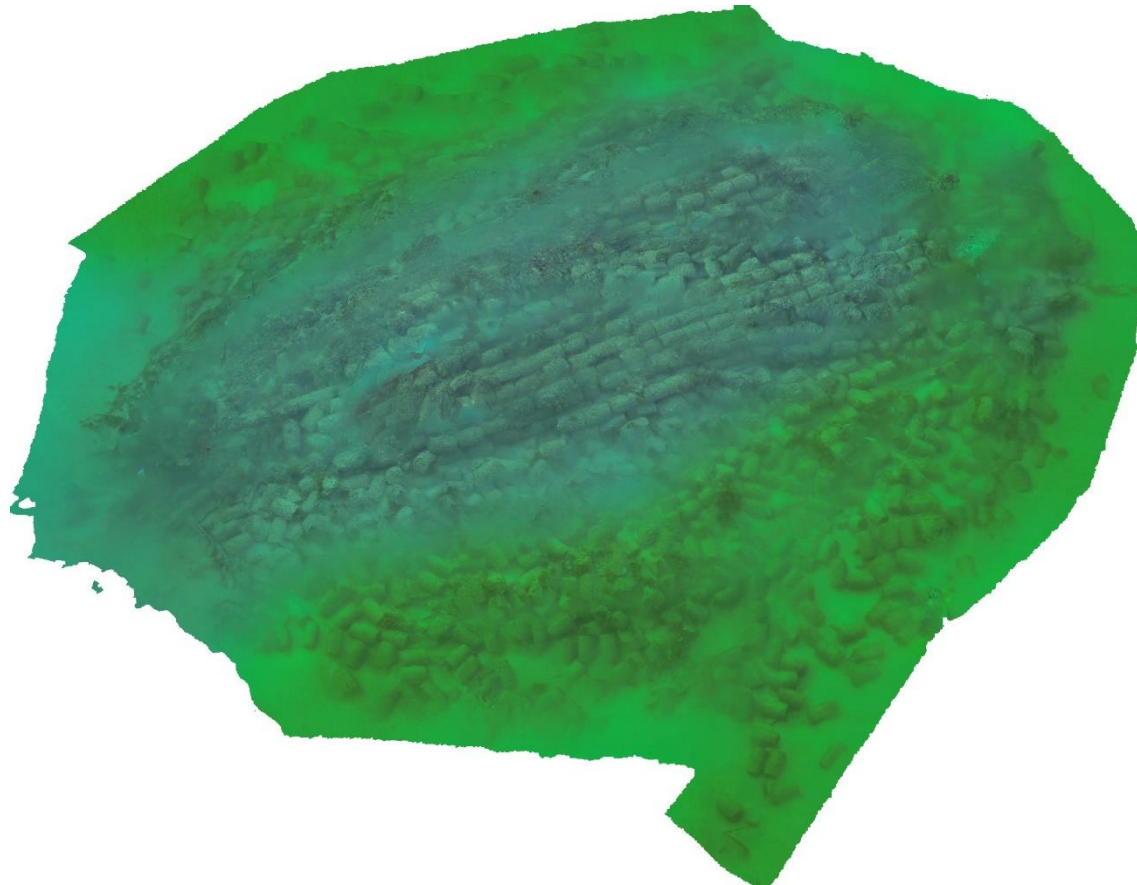
With Maria Santos, Richard Hendren, Paul Cochran, and José Bettencourt.



With Marijo Gauthier-Bérubé, Alexandre Monteiro, Flávio Biscaia, Jorge Freire, Paulo Costa, and others.



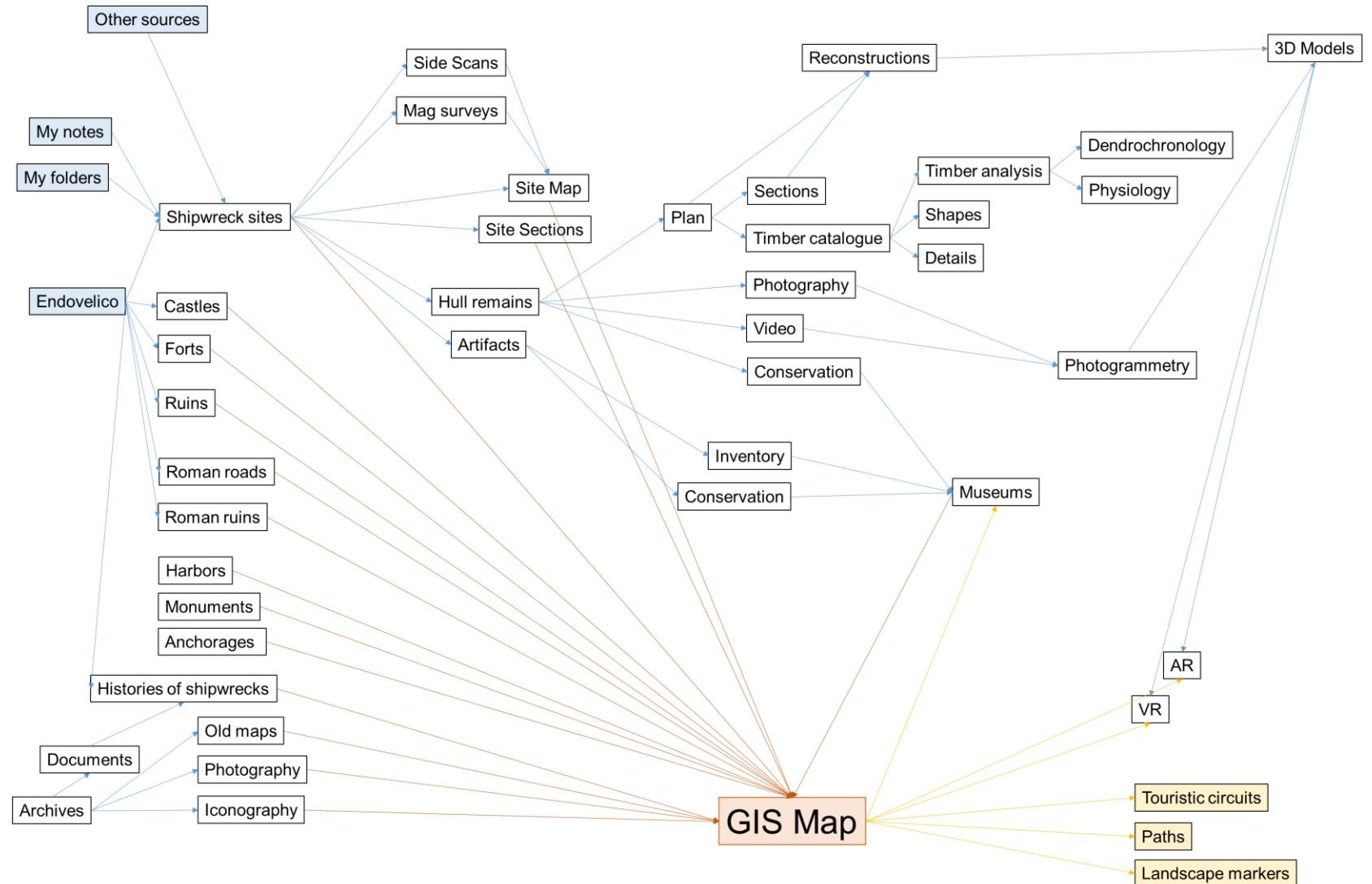
With Marijo Gauthier-Bérubé, Alexandre Monteiro, Flávio Biscaia, Jorge Freire, Paulo Costa, and others.



With Cecilia Smith, Richard Furuta, Anna Linderholm, Ana Almeida, Alexandre Monteiro, Ivone Magalhães, Maria Santos and Adolfo Martins.



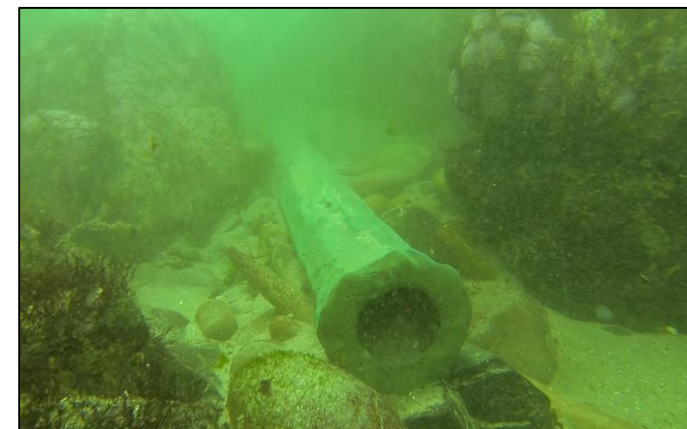
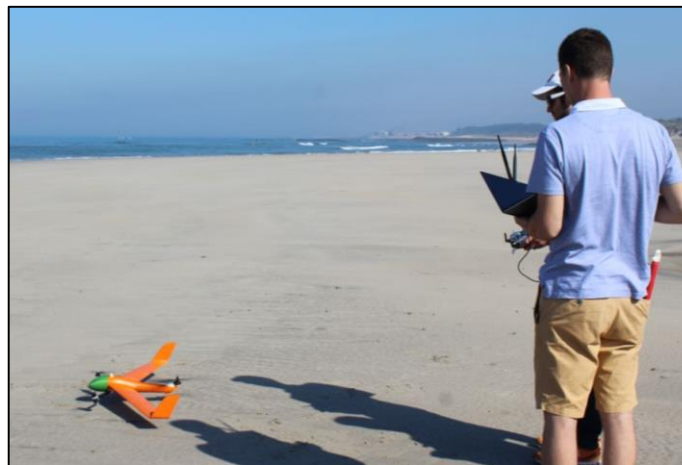
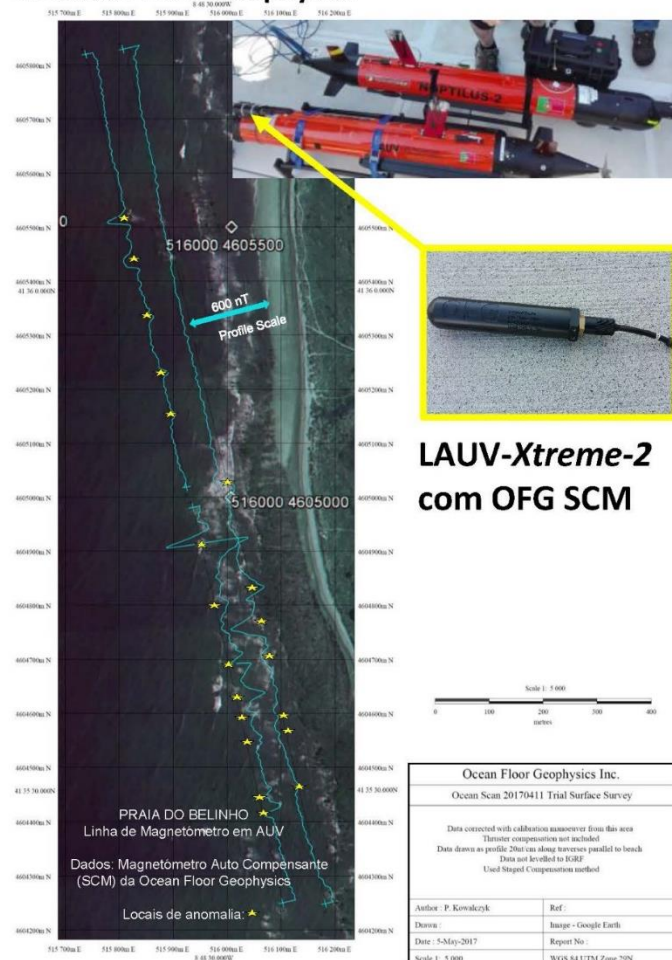
Ontologies and archaeology!



With Ana Almeida, Rosa Varela Gomes, Adolfo Martins, Nigel Nayling, Ivone Magalhães, and Alexandre Monteiro.



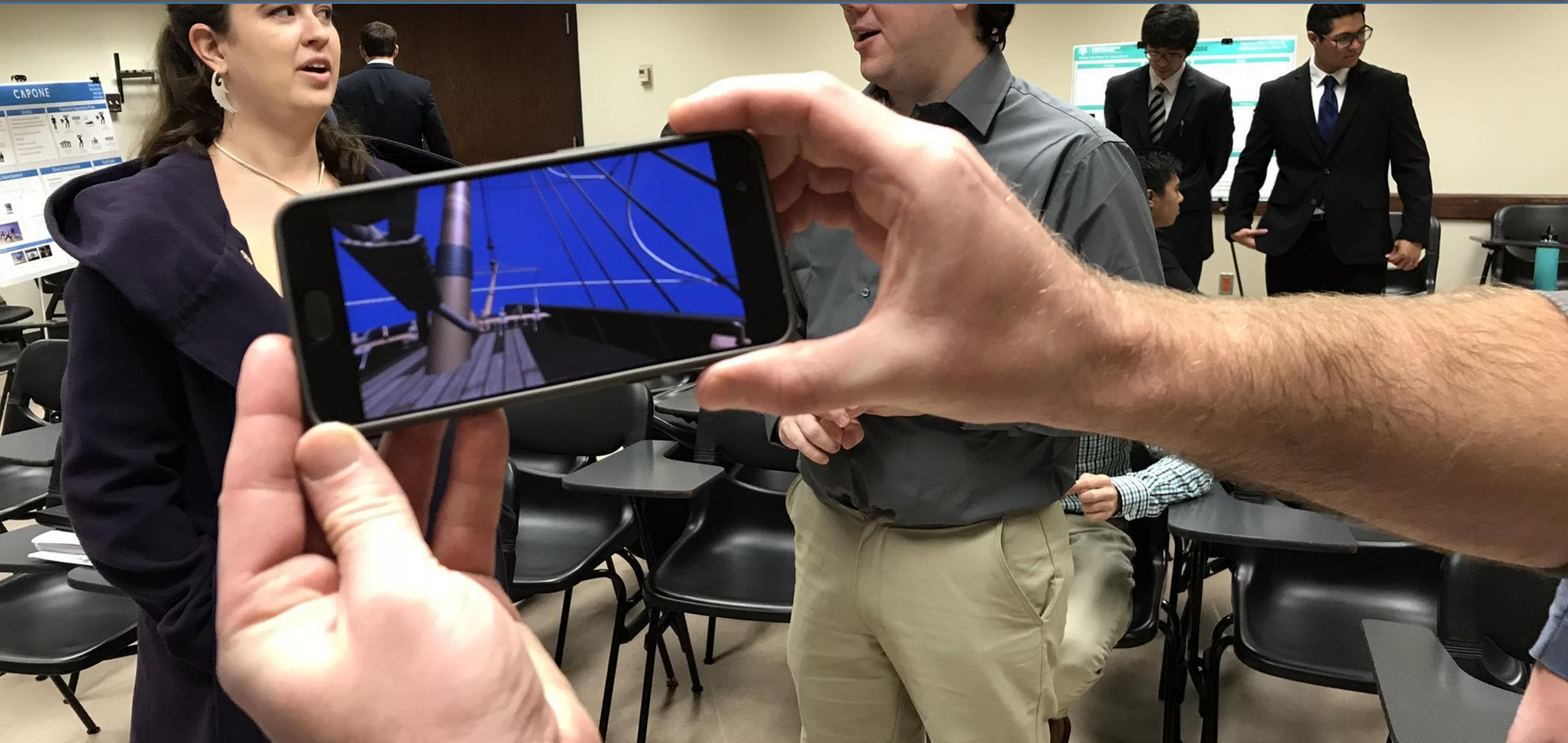
Levantamento magnético de área pesquisada com Magnetômetro Auto Compensante (SCM) da Ocean Floor Geophysics



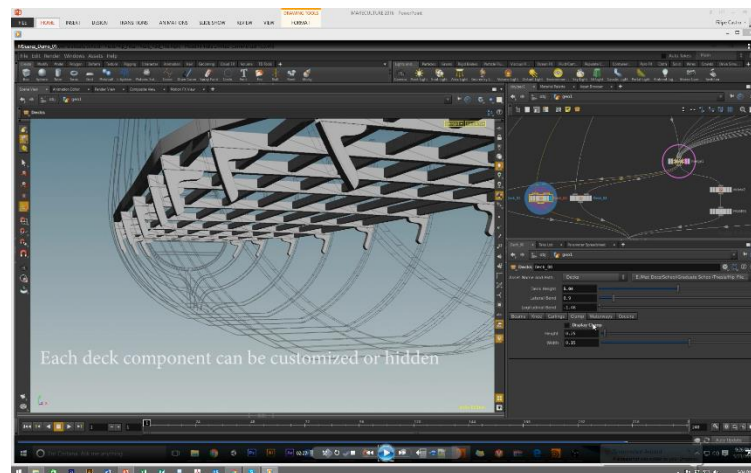
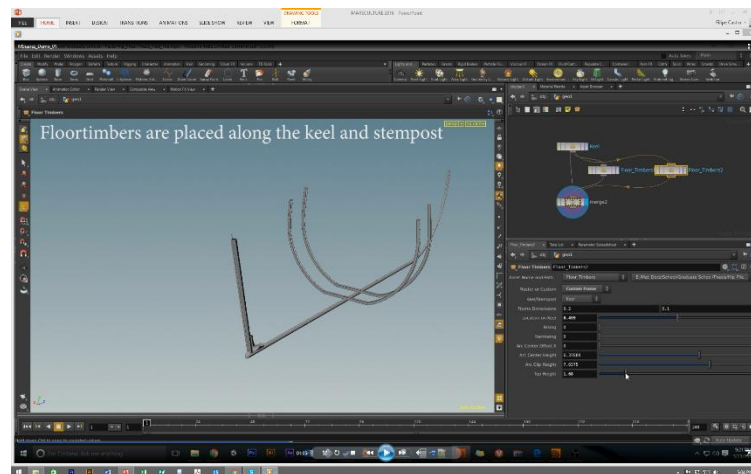


With Bruce Gooch, Cody Leuschner, Joshua Hooton, Thomas Sell, Jacob Stafford, among others.





Matt Suarez: *A Procedural Approach to Computer-aided Modeling in Nautical Archaeology* (MS 2016).



Austin Griffin: *Iconography of Early Modern Ships and Boats*.

ICONOGRAPHY OF EARLY MODERN SHIPS AND BOATS

HOME ABOUT APP SEARCH CONTACT

Results Per Page:

6

Ship_type

Any

Propulsion

Any

Sails

Any

Masts

Any

Construction

Any

Stern_shape

Any

Bowsprit

Any

Date Range:

1750 - 1850

Country/Region:

Select Region

Search

Results

Map

Map Satellite

Google

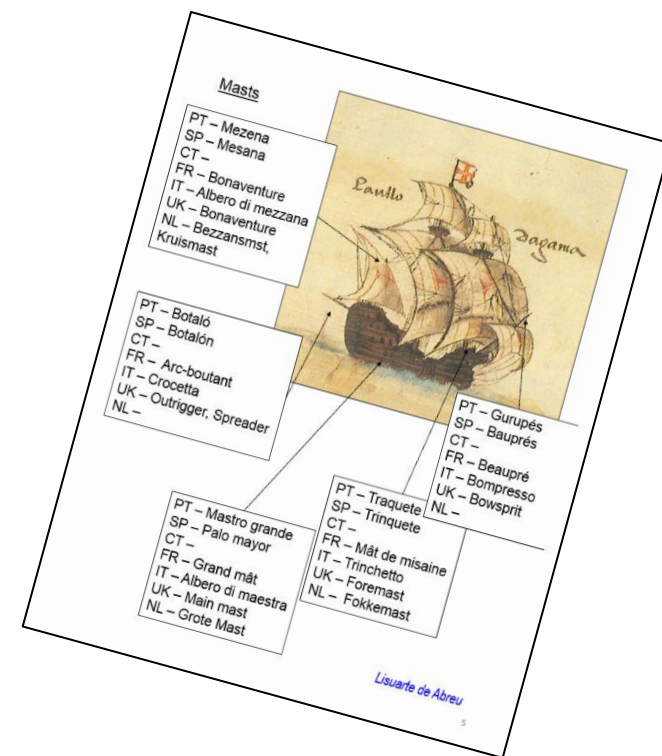
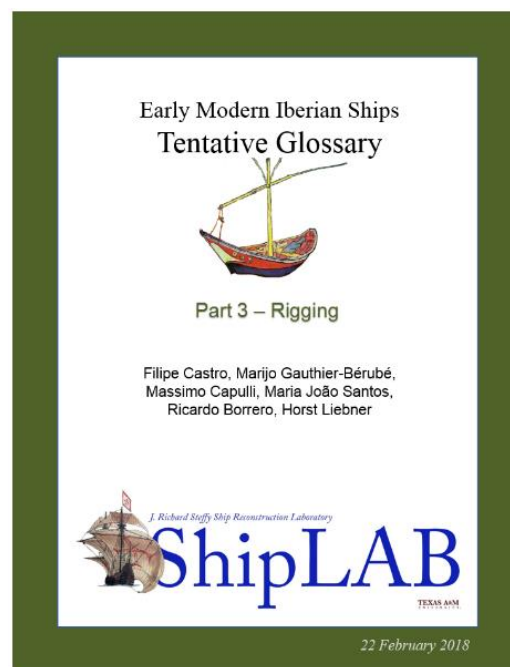
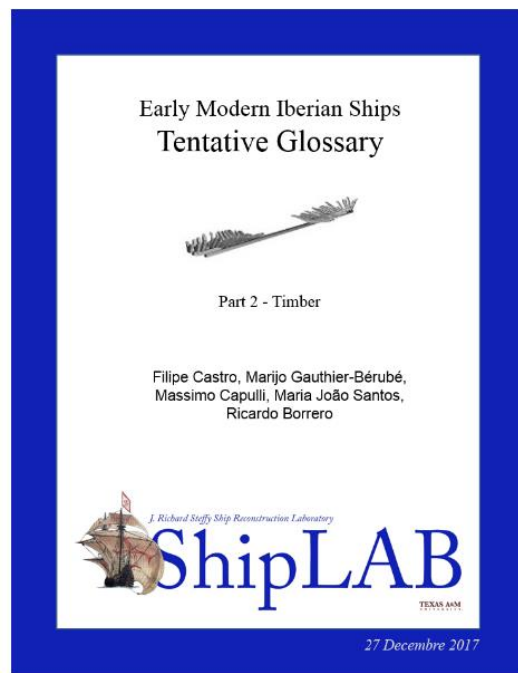
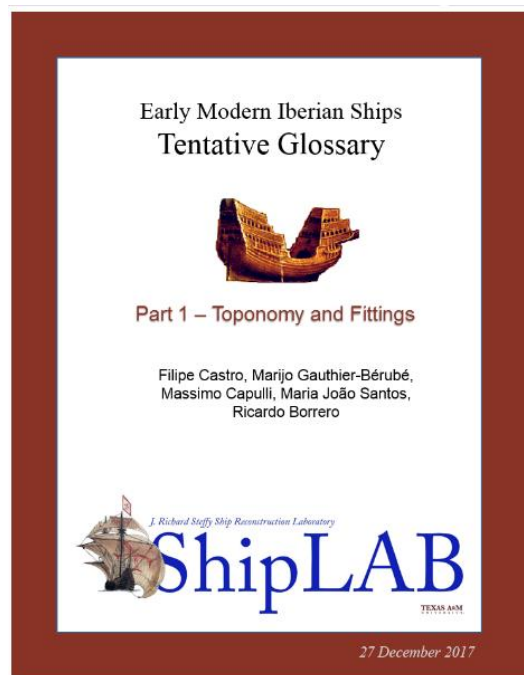
Map data ©2016 Google, INEGI Terms of Use





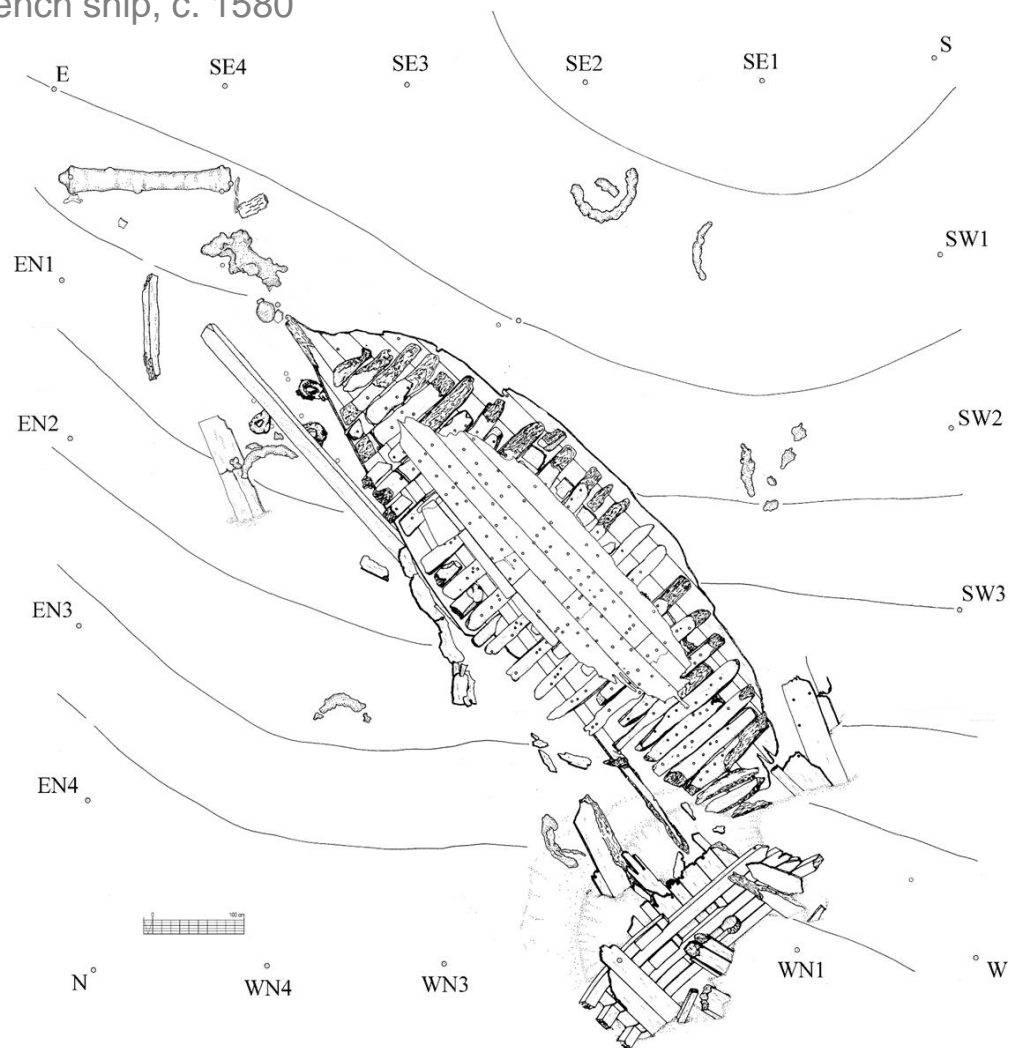
We are collaborating with the Department of Ocean Engineering at A&M and with the Univ. of Porto to develop robots and drones using archaeological sites to test them.

With Marijo Gauthier-Bérubé, Massimo Capulli, Maria Santos, Ricardo Borrero, Horst Liebner, and others.

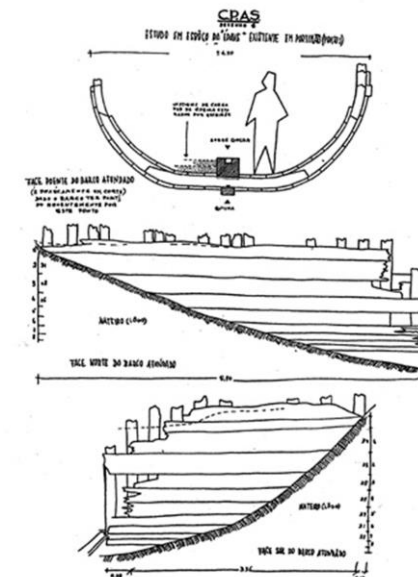
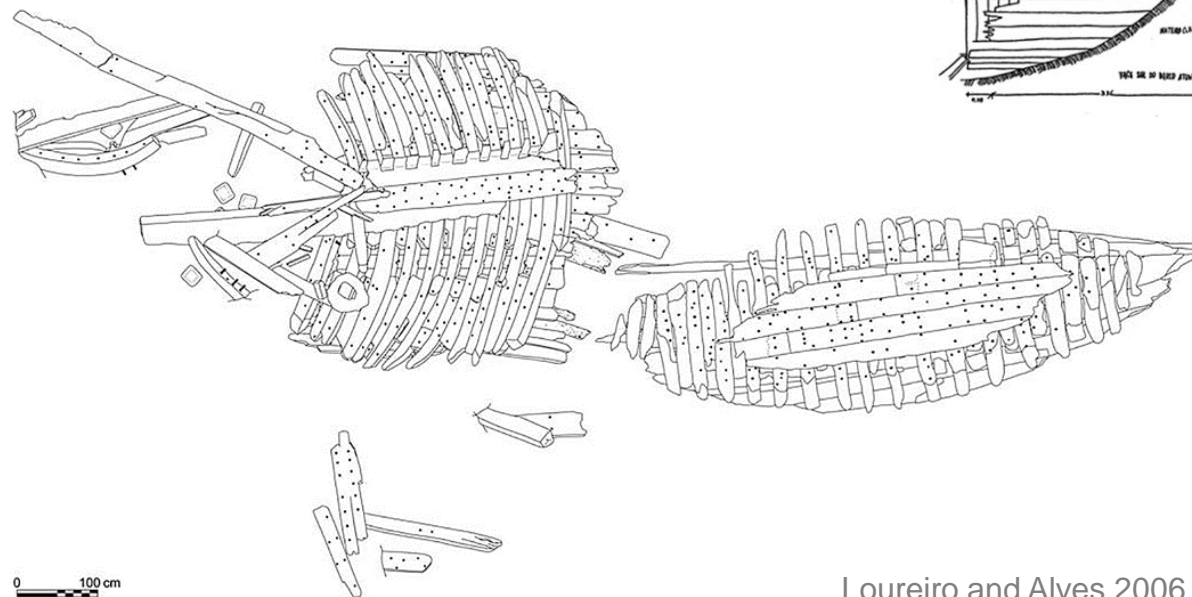


Available @ Academia.edu

French ship, c. 1580



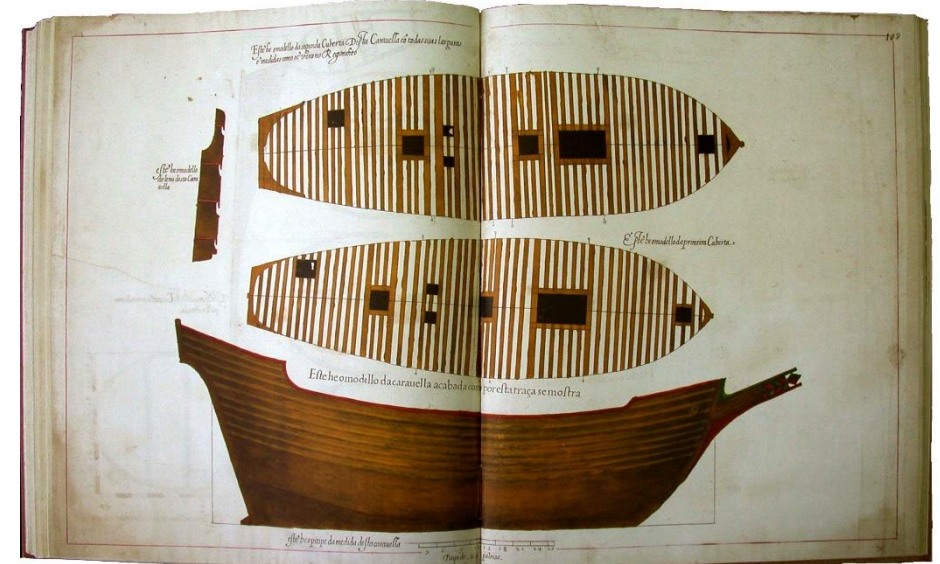
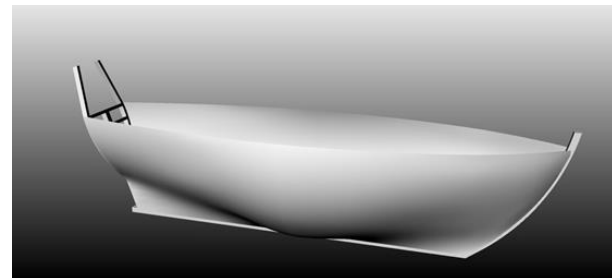
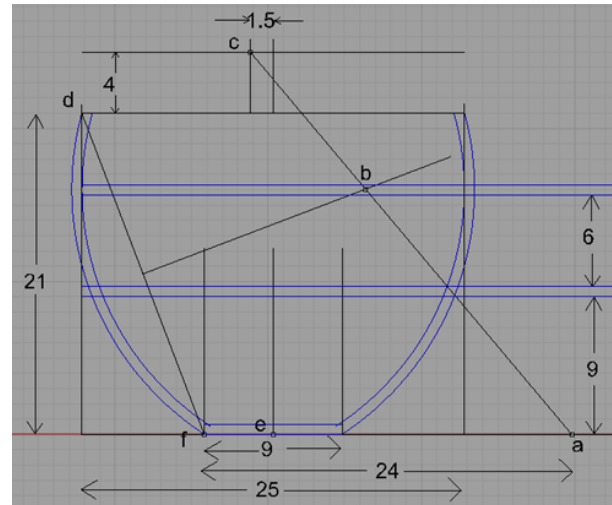
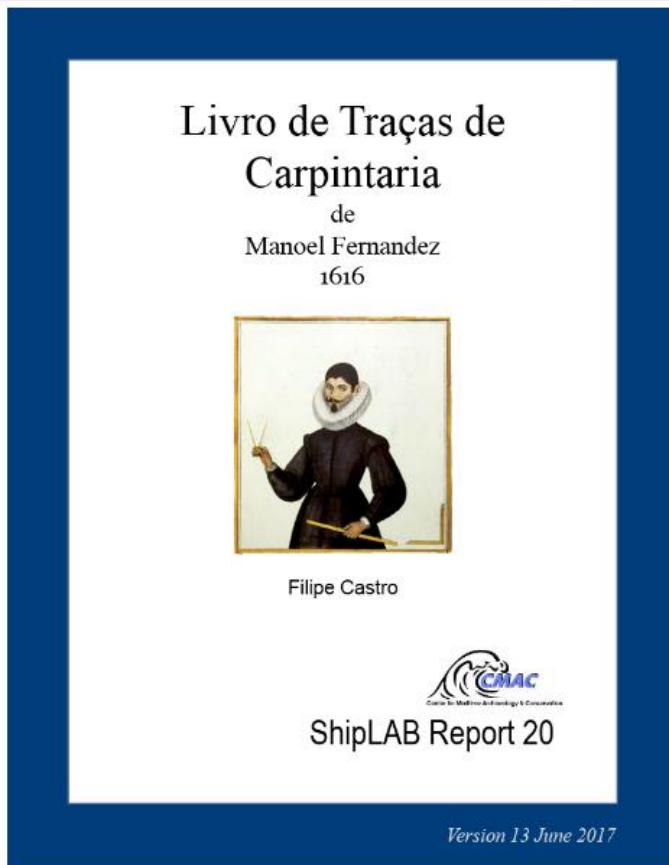
With Marijo Gauthier-Bérubé, Charles Bendig, Chris Dostal, José Bettencourt, and others.



Loureiro and Alves 2006

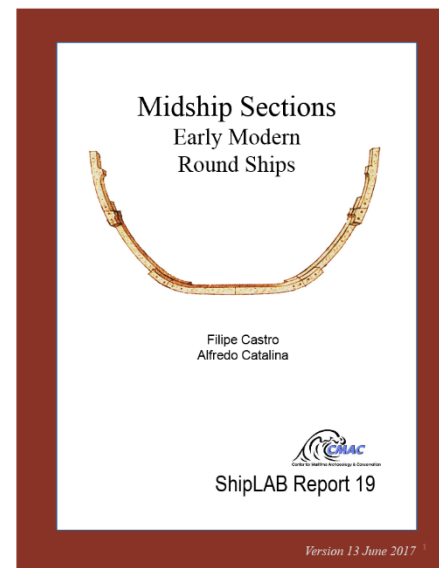
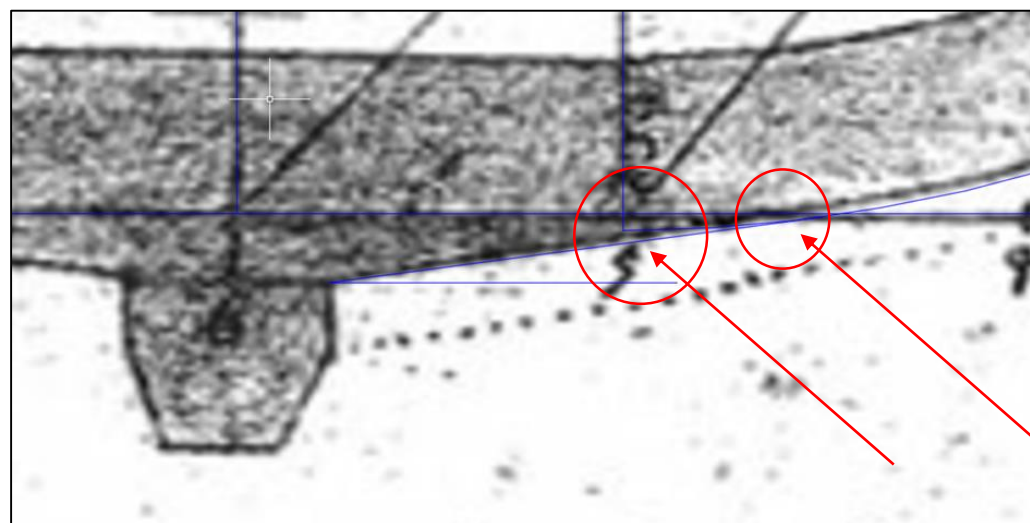
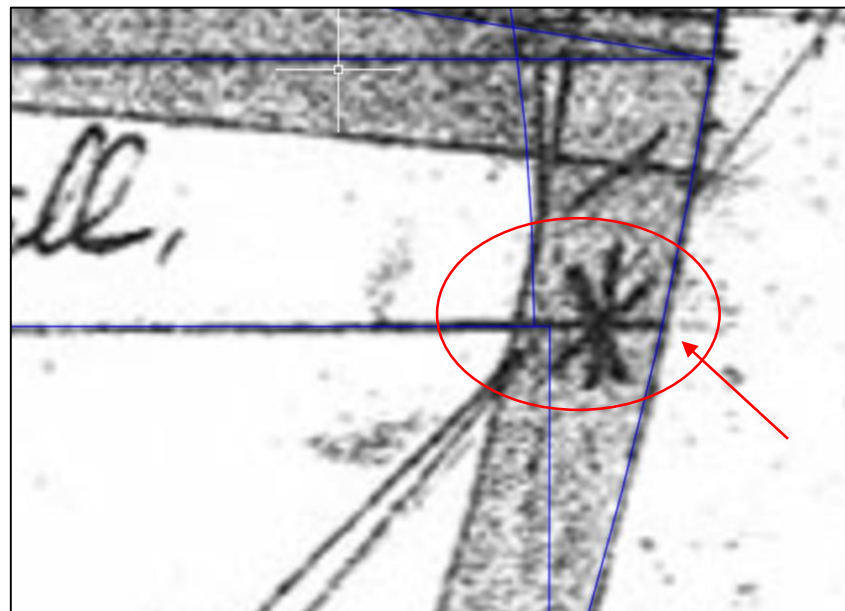
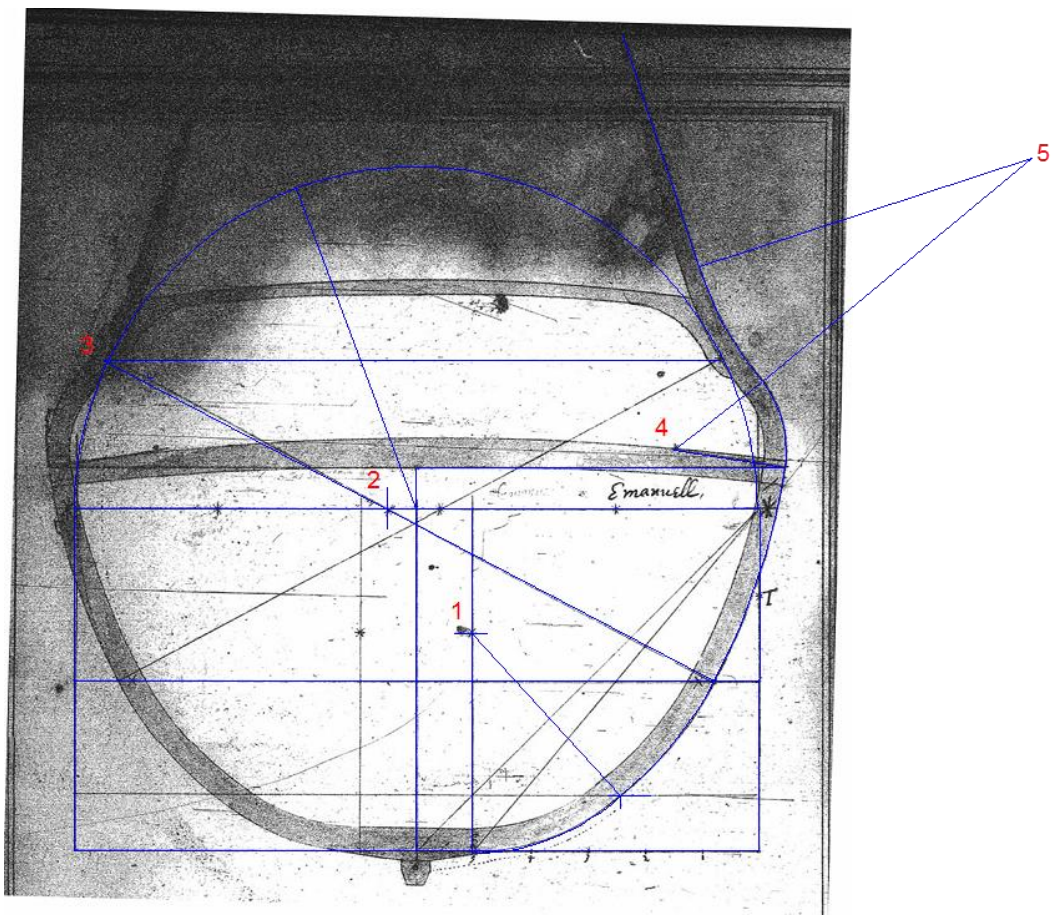


With Maria Santos



Em o lançamento, terá nove palmos de giro, quando tirarem as formas no chão em altura de
 vinte e hum palmo medidos pella esquadria dareis de bocca na forma vinte e cinco palmos
 rodará o obraço e a caueria, e a postura com a altura que tiver do couado a maior largura que he
 adonde refere os vinte e cinco palmos, e repiana o couado hum terço da altura da madeira, e virá
 o rol referindo pelloz pontos os quaes vem a saber os vinte e cinco palmos, e os vinte e quatro
 he o a repiamento do couado, ficará a forma perfeita na primeira cuberta terá vinte e quatro pal-

With Alfredo Catalina Gallego

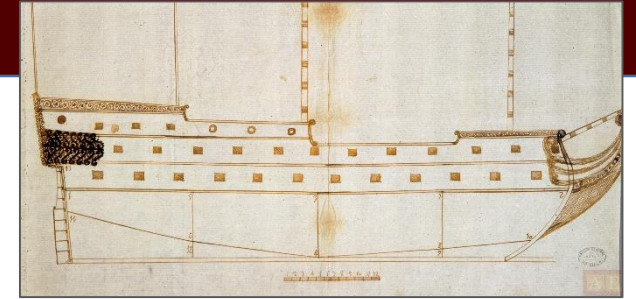
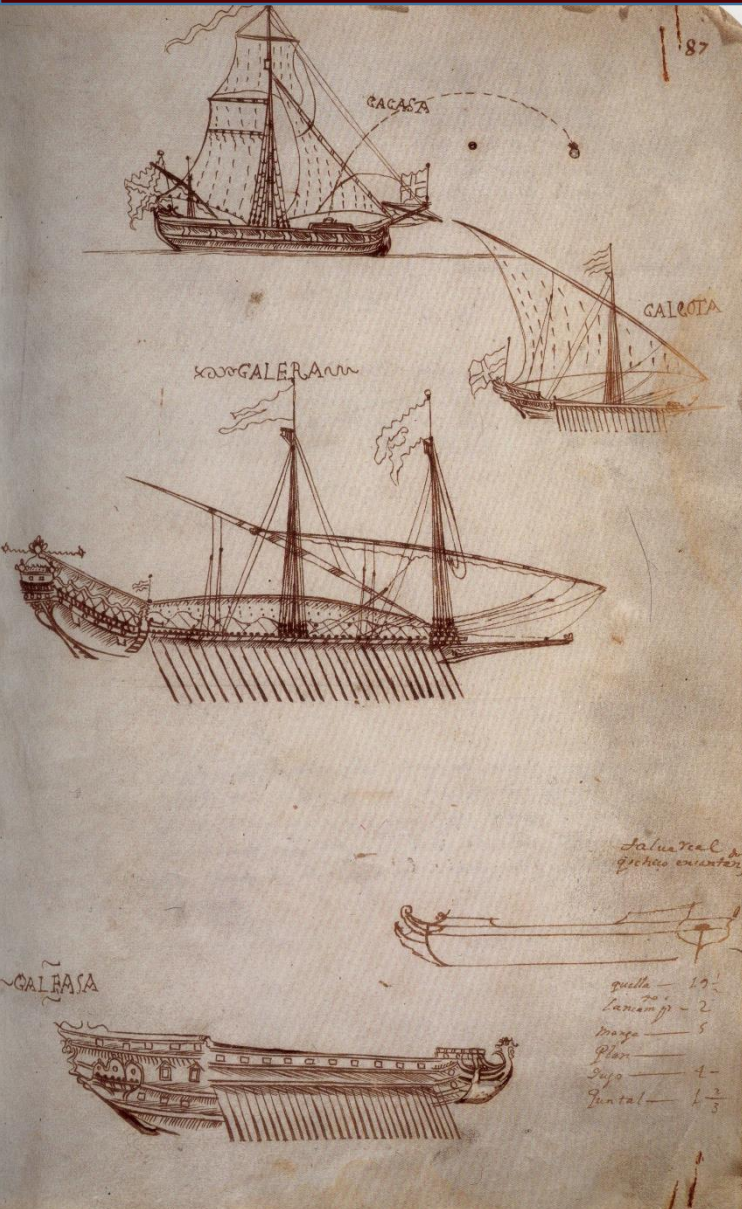




An analysis of construction traits and cultural traditions in European shipbuilding.



An Oceanic Tradition:
Understanding European
Expansionism Through a
Hybrid Shipbuilding
Methodology



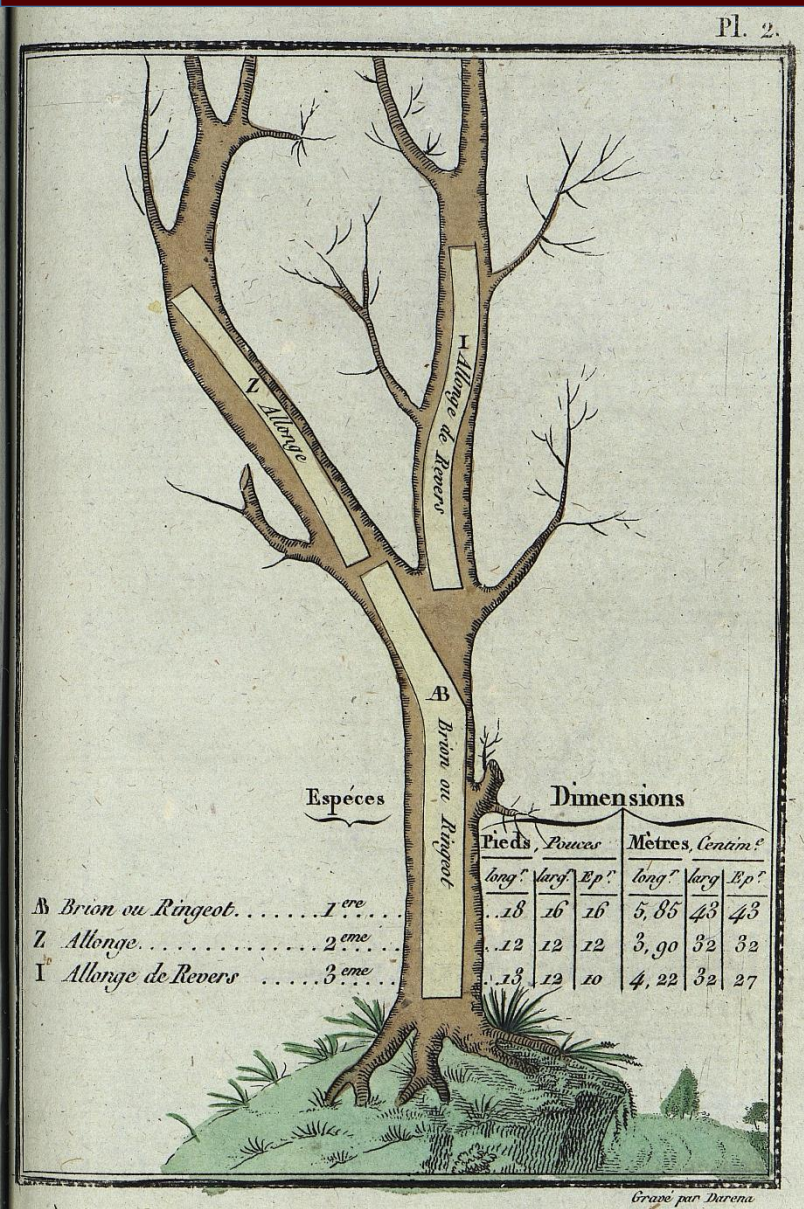
Iberian ship design in the 17th century.



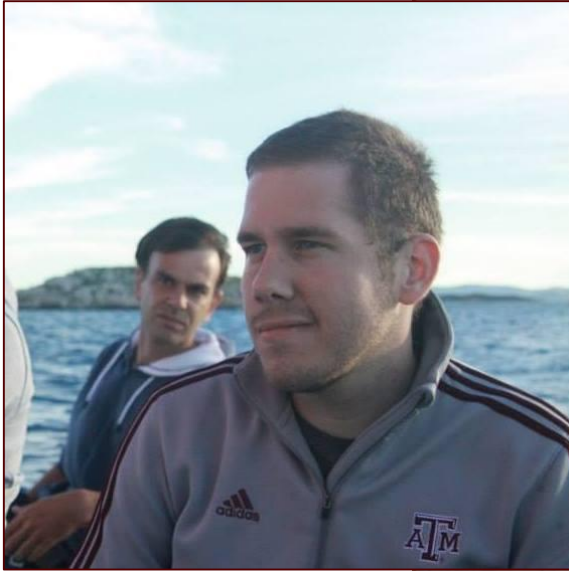
Crossroads on the Coast: A Preliminary Examination of Bridgetown, Antigua



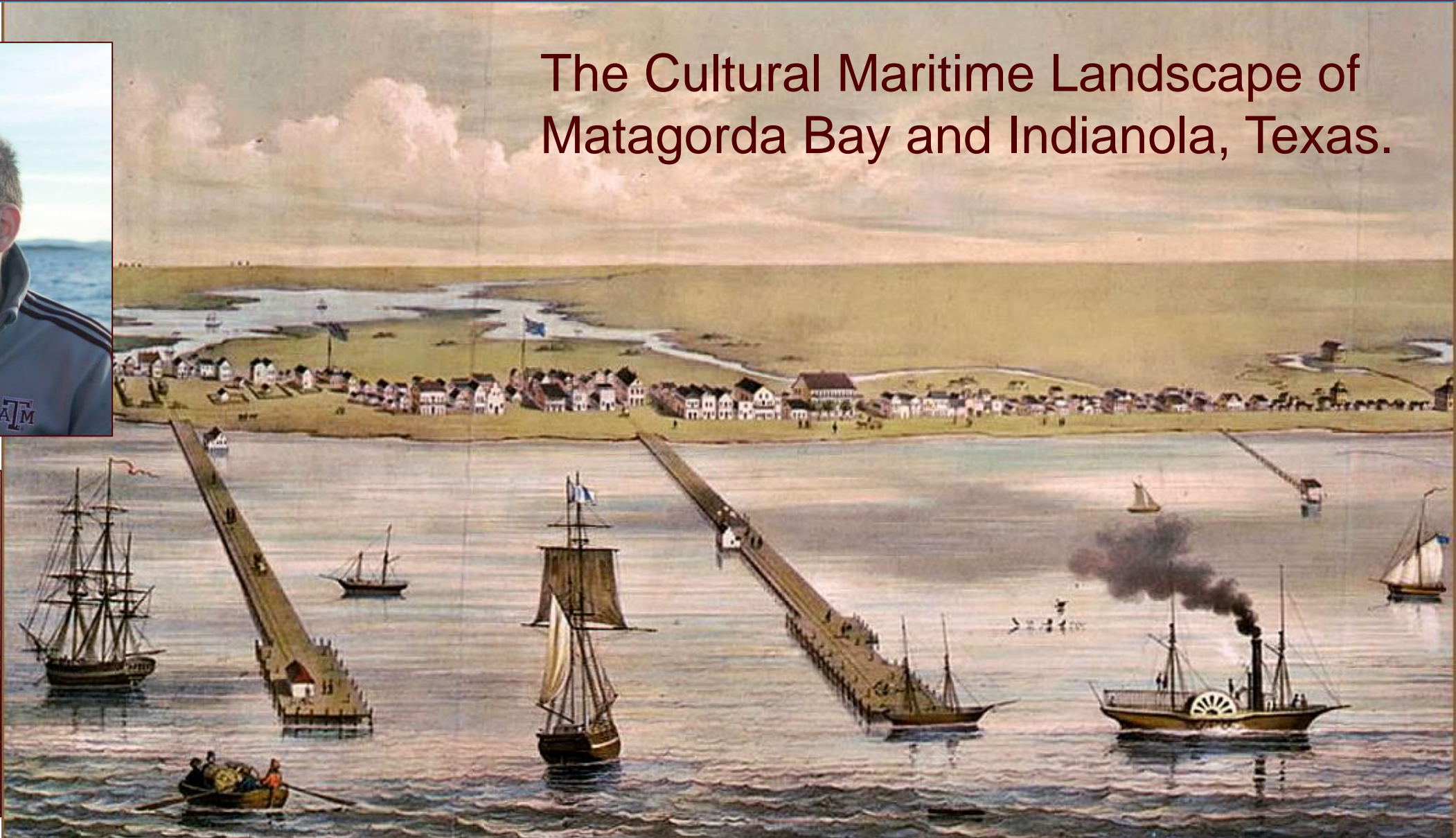
The Milam Street Bridge Artifact Assemblage: Unravelling a Mystery –
An Artifact and Document-Based Study Concerning Buffalo Bayou,
the American Civil War, and the City of Houston, Texas

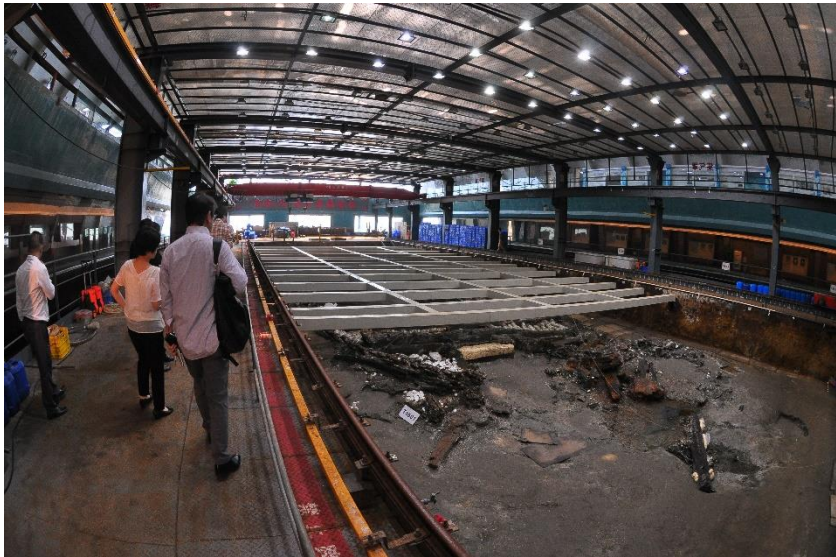


From the Forest to the Sea: French Shipbuilding and Forestry Management of the 17th and 18th century.



The Cultural Maritime Landscape of Matagorda Bay and Indianola, Texas.





Creating a Management System for
Underwater Cultural Heritage in
Japan.



Community archaeology, sustainability of archaeological projects, and the protection of the cultural heritage in countries with limited resources.

Thought and Practice in Nautical Archaeology: Underwater Cultural Heritage in the Bahamas and the Highbourne Cay Shipwreck



Nicholas Budsberg: the Highbourne Cay Shipwreck Project

c.c. (9): Nicholas Budsberg, Charles Bendig, Ricardo Borrero, Marijo Gauthier-Bérubé, Kotaro Yamafune, Rodrigo Torres, Samila Ferreira, Raphael Franca, Kelsey Rooney; c.m. (3): John Albertson, Annaliese Dempsey, and Robin Galloso.

THE SOCIETY FOR HISTORICAL ARCHAEOLOGY PRESENTS

CONVERGING WORLDS: EXCAVATING THE HIGHBOURNE CAY SHIPWRECK

SYMPOSIUM – NEW ORLEANS, LA

JANUARY 5th, 2018 – SHA.ORG



ShIELD
SHIPWRECK INSTITUTE



NATIONAL
GEOGRAPHIC
SOCIETY



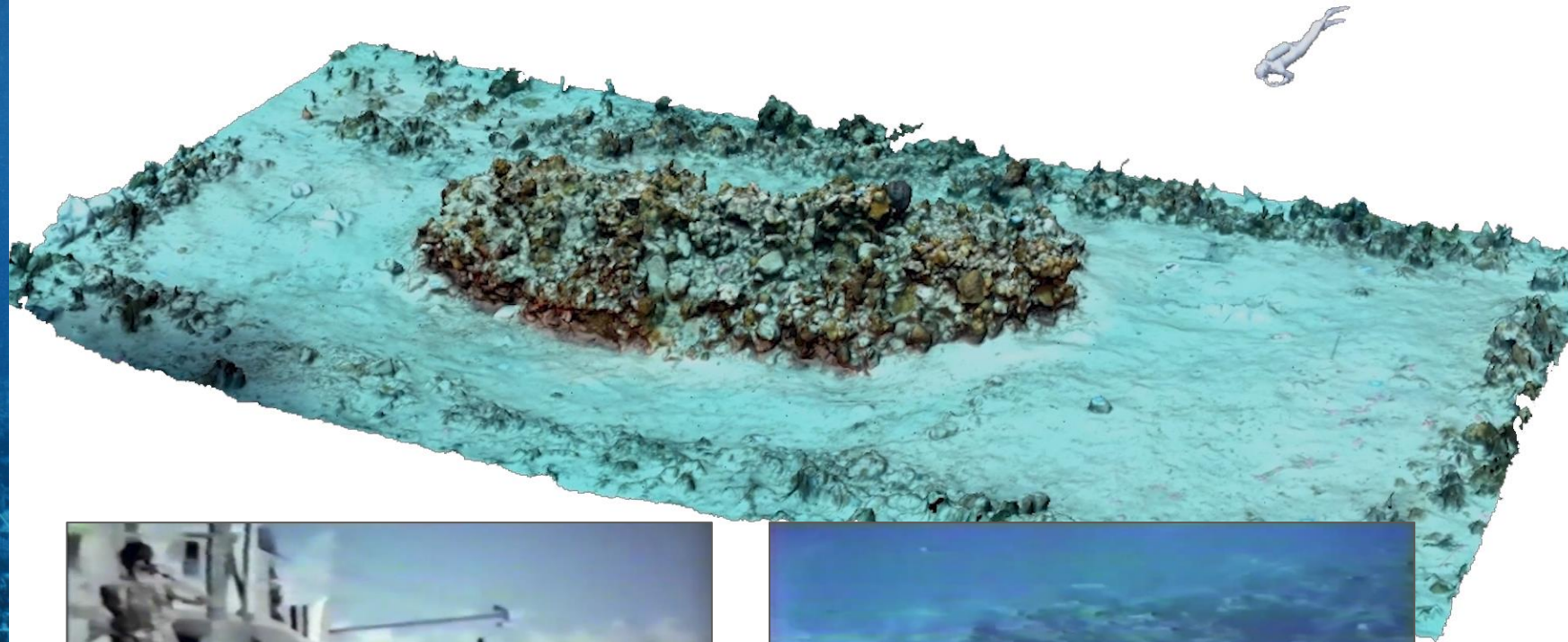
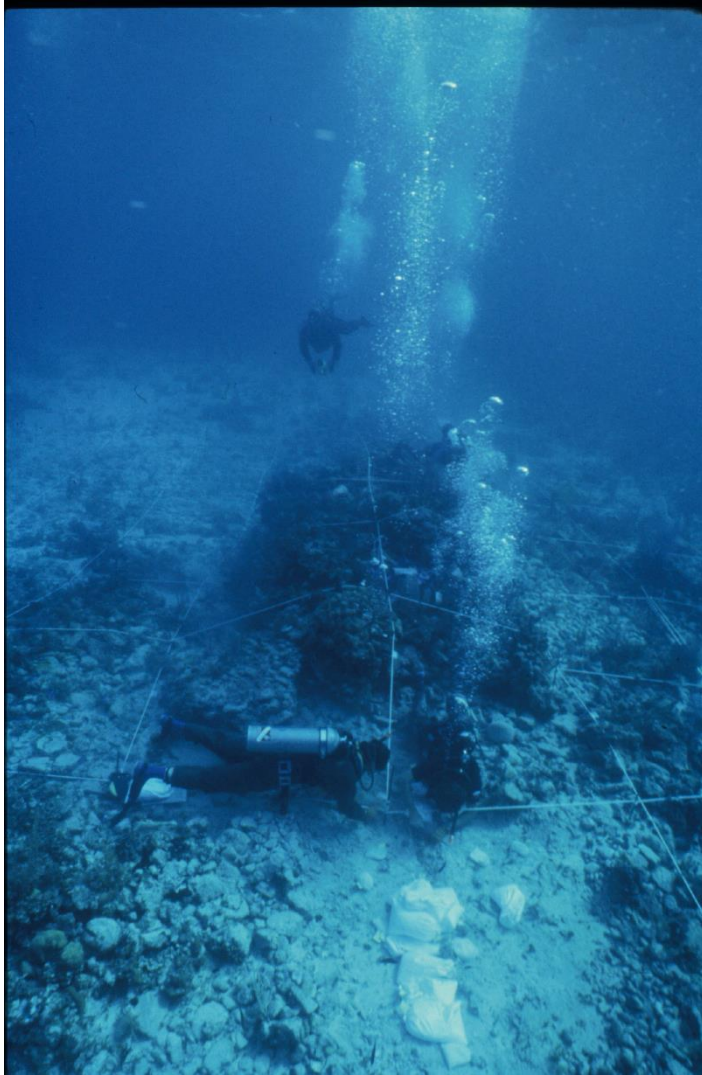
STUART
COVE'S



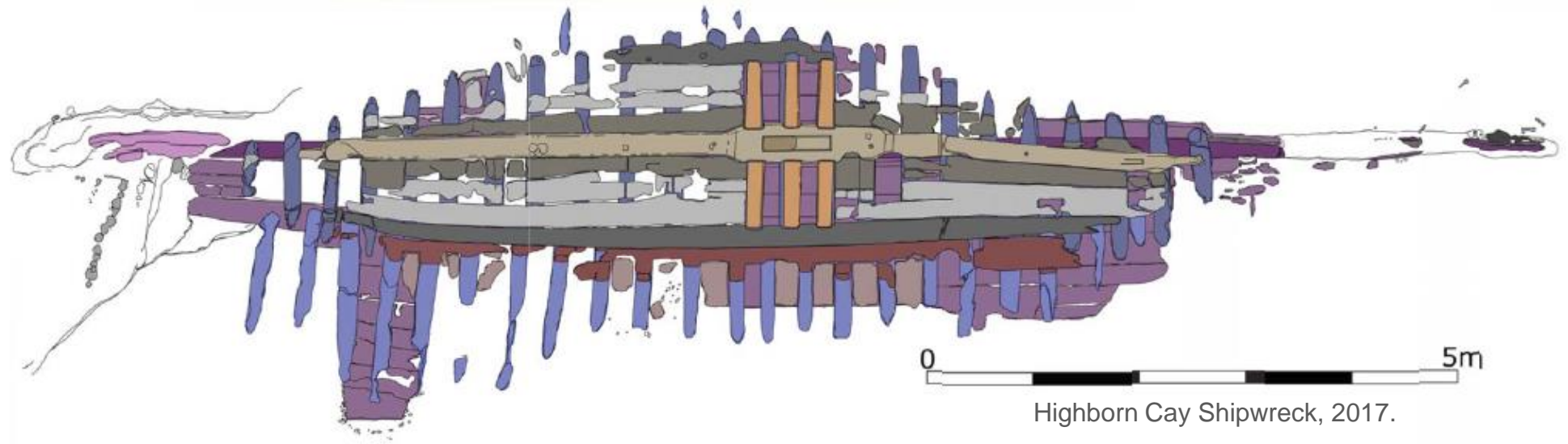
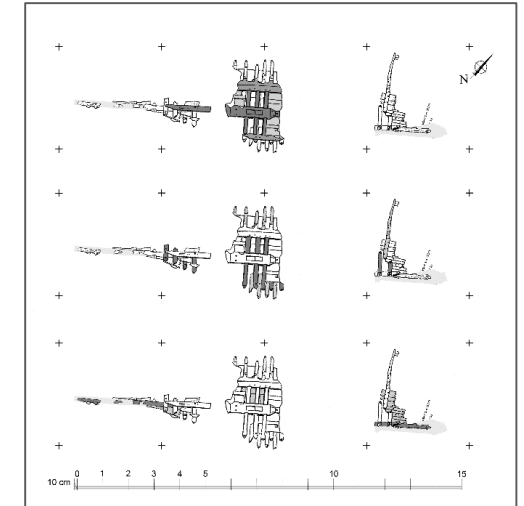
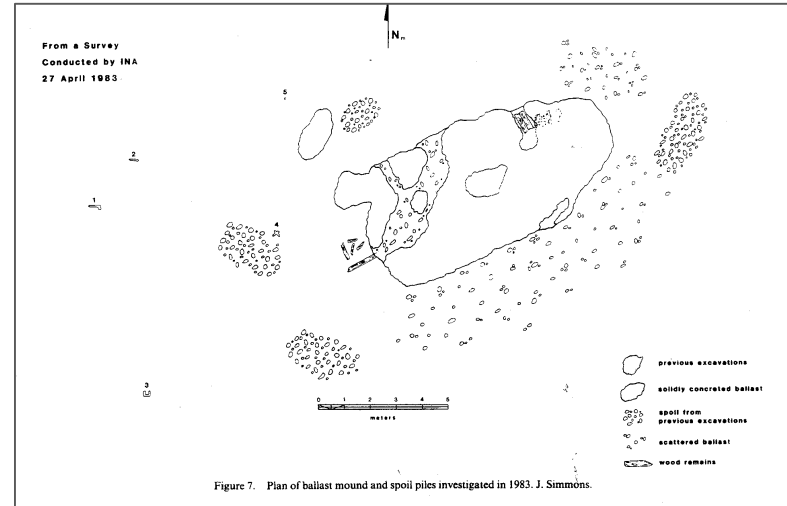
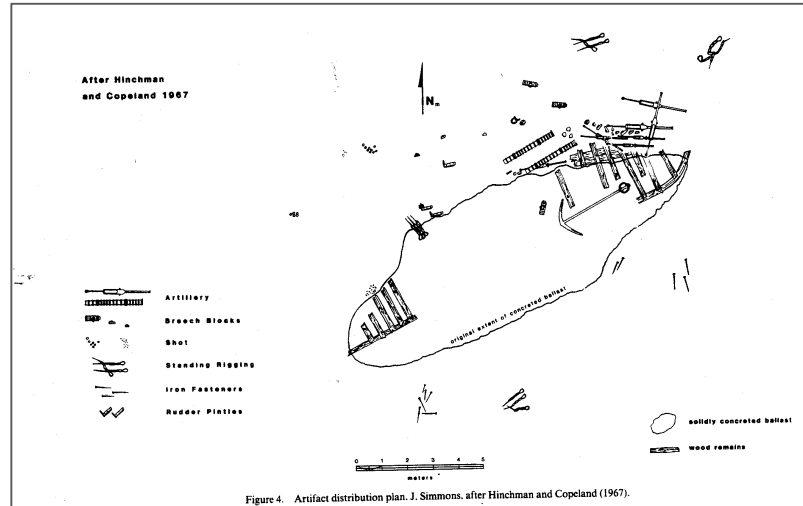
THE
ORCHARD
GARDEN
HOTEL

Highbourne Cay Shipwreck

Looted in the 1960s and surveyed by INA in 1983.

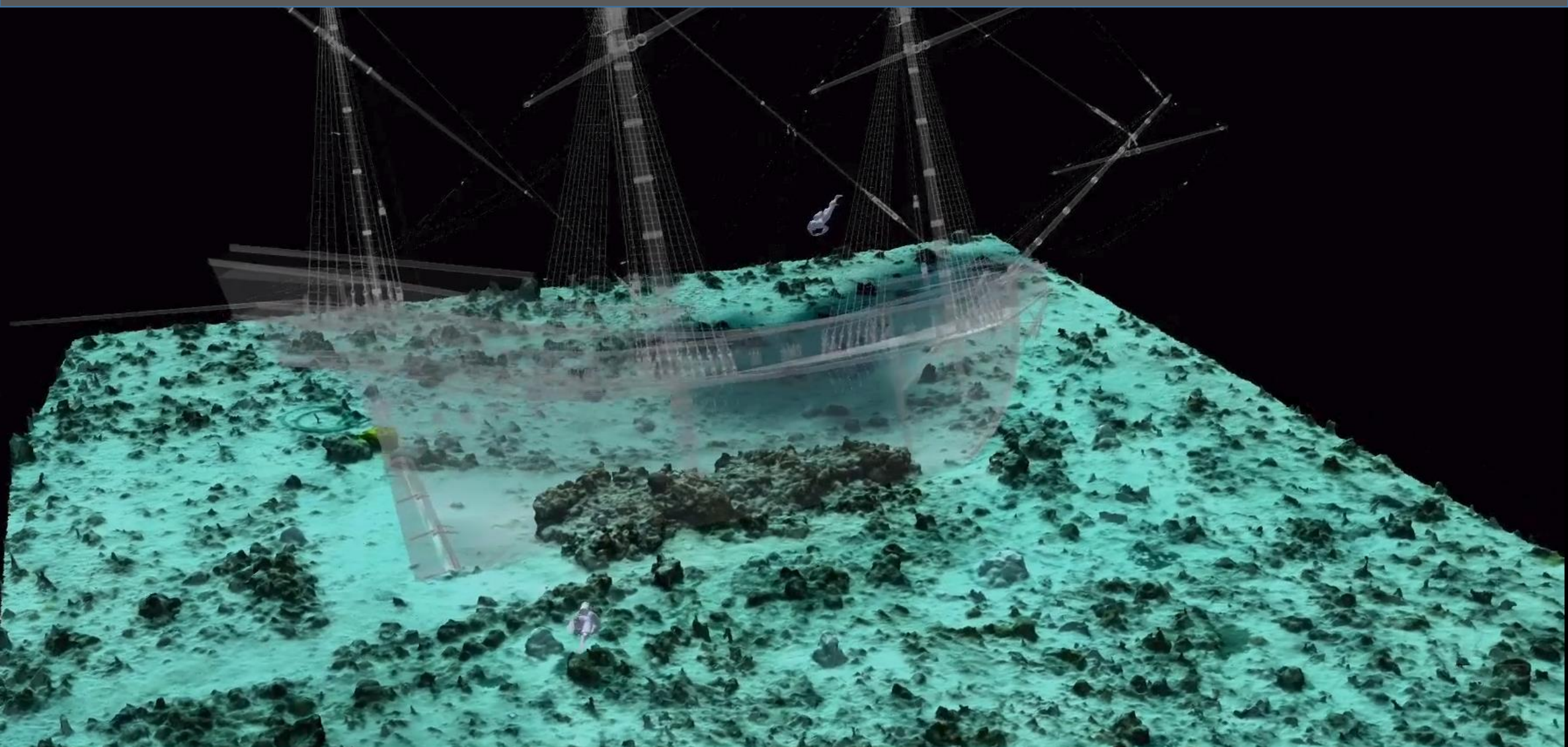


Previous work:

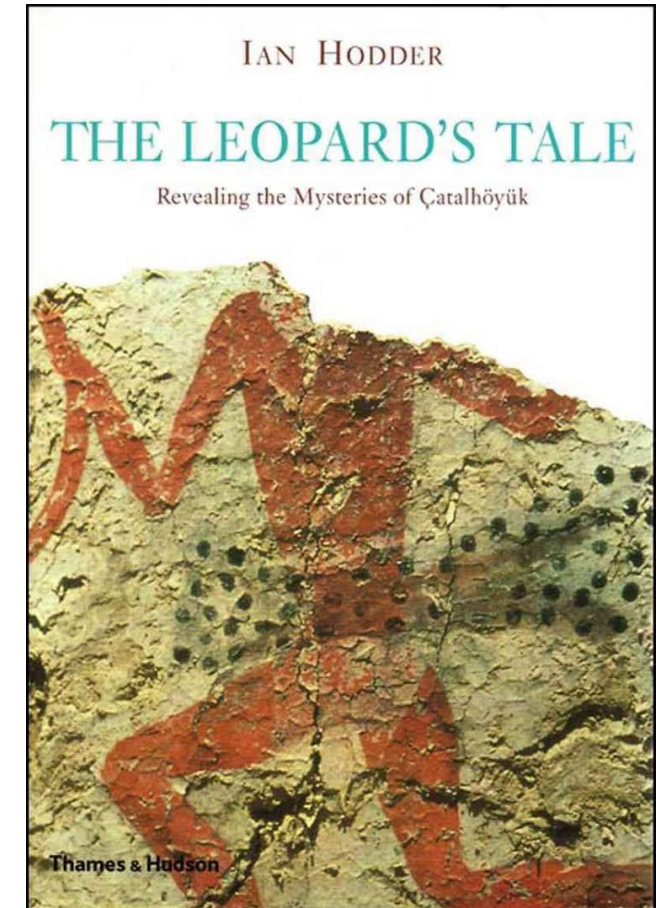


Highborn Cay Shipwreck, 2017.

Highbourne Cay Shipwreck



Community archaeology: archaeologists share their work with the general public, and welcome their input.







I love it.

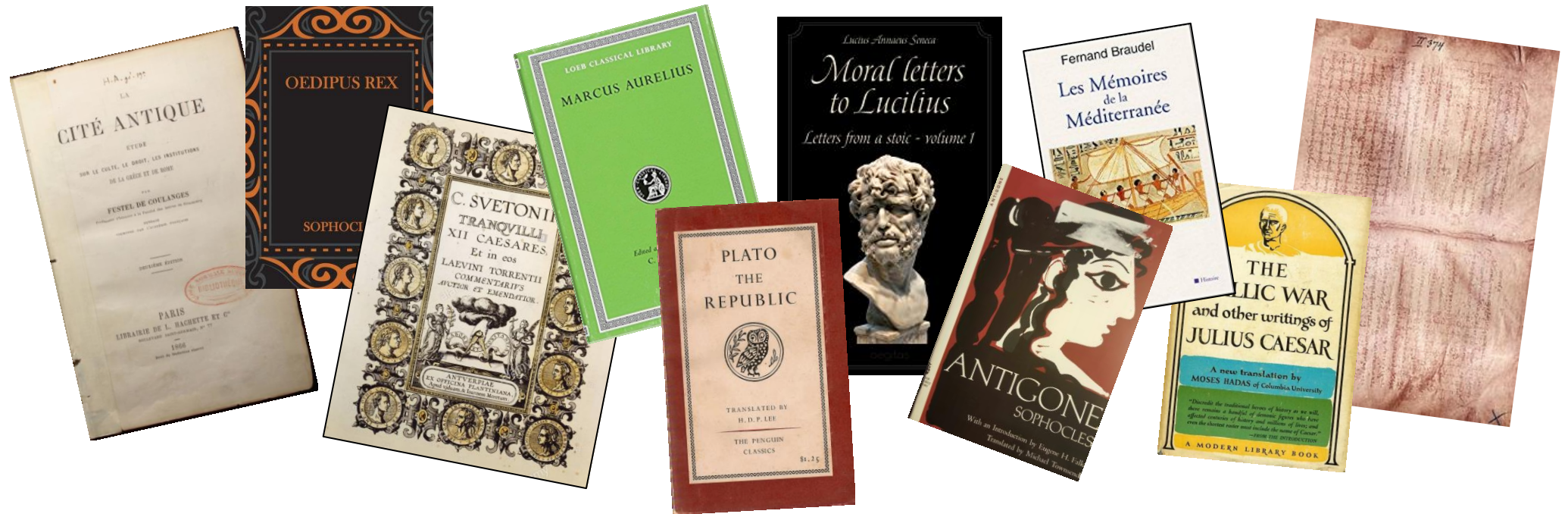


I really want to be an archaeologist now.

Archaeology was anthropology long before anthropologists claimed that “archaeology is anthropology or it is nothing.”

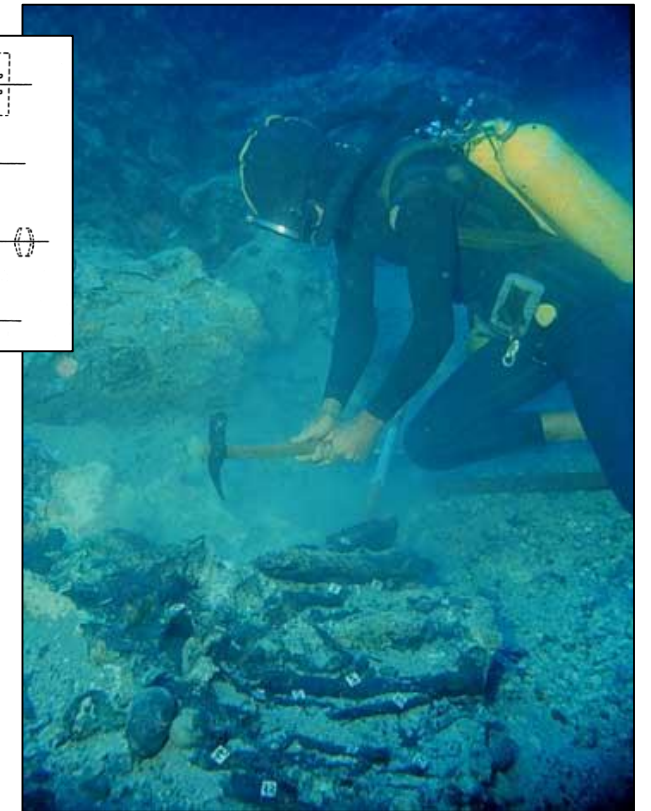
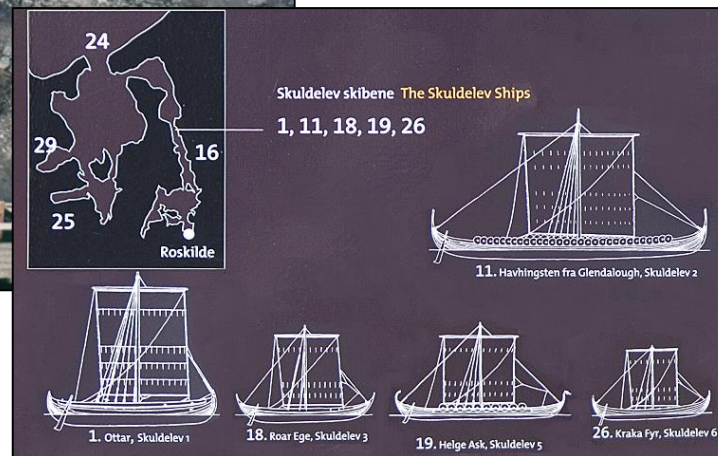
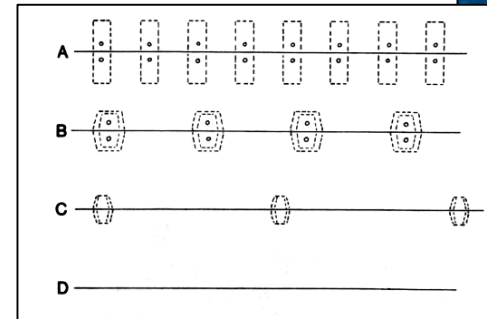
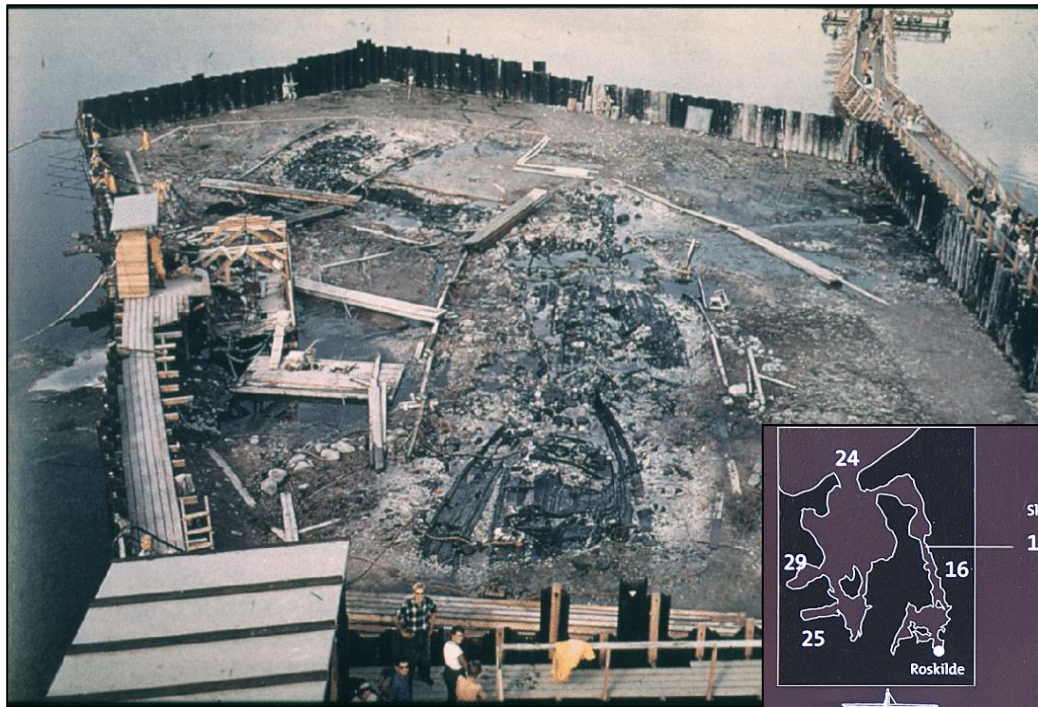


To classicists and medievalists archaeology is history.



But Classicists and Medievalists know the people that built the boats: their houses, villas, gardens, farms, irrigation systems, villages, cities, roads, bridges, tunnels, and mines, their calendars, their crafts, their art, their literature, history, gossip, cosmogonies, religions...

In the 1960s both pioneers George Bass (a classicist) and Ole Crumlin Pedersen (a naval architect) looked at ships in the context of what they knew about the people that built and sailed them, within a cultural evolutionary model.





Archaeology, ethnography, and ethnology have always been connected: archaeologists often reconstruct the past using ethnographic analogies.

Theoretical Frame: the New Musée de l'Homme





Who are we?
Where do we come from?
Where are we going?
What can we know
about ourselves?

Man, animals, plants, are we part of the same clan?

The boundaries between culture and biology.



Man and nature

Man's relation with nature, constructions, and artifacts.



Man and the spirits of nature

Man's relation with other people and collective interpretations of the metaphysic world.



Man and the world within

Man's relation with himself.

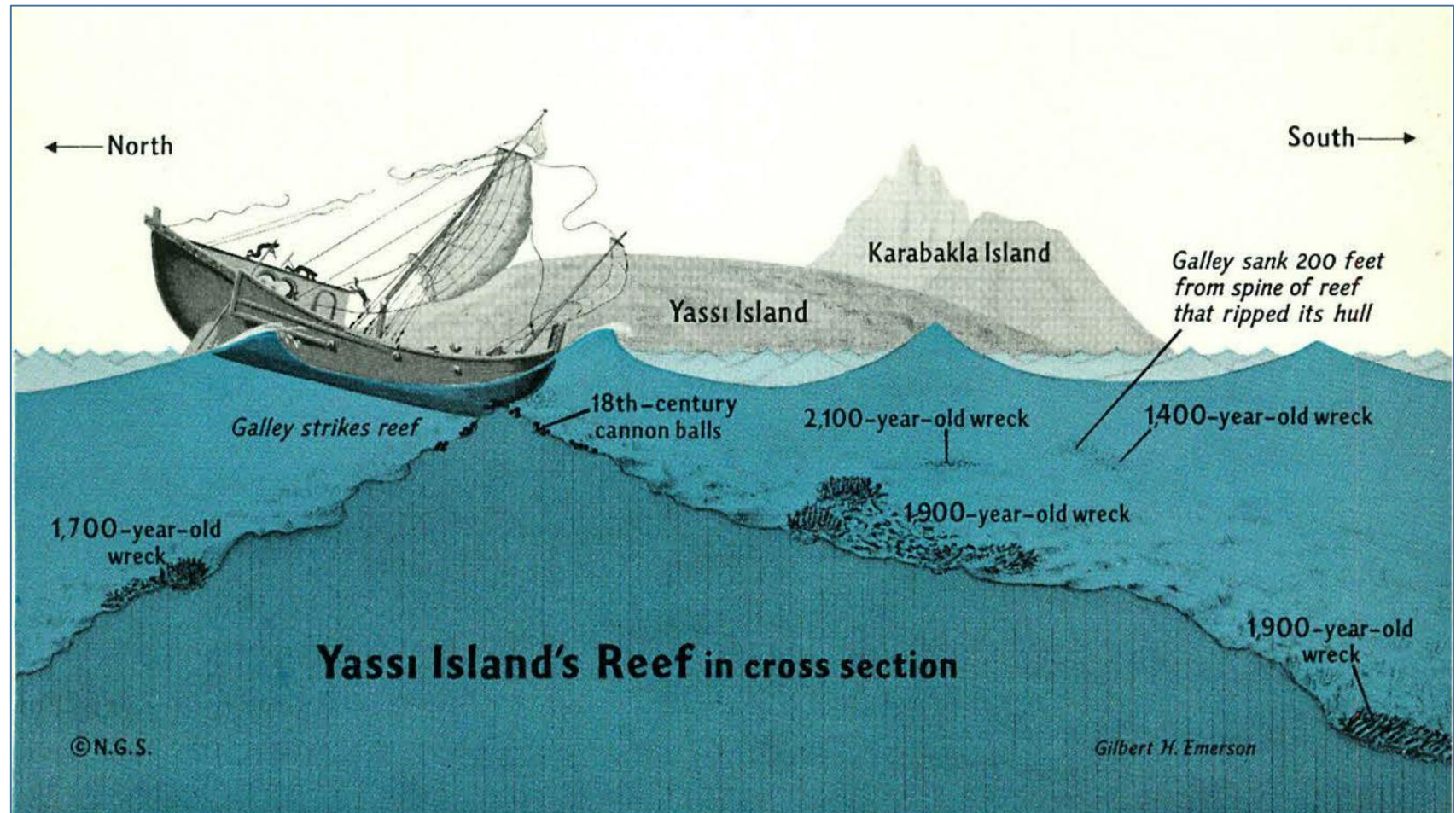


Archaeologists in the 19th and early 20th centuries worked and published mostly for themselves. While the general public rushed to newly established museums, mostly to see exotic artifacts, archaeologists excavated, recorded, and interpreted the dwellings, the villages, the landscapes, the territories, and the artifacts of old cultures, and described their lives in relation to the historical documents available.



The Louvre opened on August 10, 1793, the first anniversary of the imprisonment of King Louis XVI and Marie Antoinette, which led to the First Republic (in September).

Bass and Crumlin-Pedersen turned archaeology outwards and started to publish for the lay public.





In the 21st century nautical archaeology will gather more public interest. Archaeologists are seizing the treasure hunter's market share.





"The world is lost! Today's young people don't know anything and have no sense of responsibility..."



Young people are
our best hope!

*Let's talk
about boats
and ships!*

Questions?