

New reflections on the protection of World Heritage in the future: Global symbolic meaning of autochthonous and indigenous origins of water navigation

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Abstract:

The findings of prehistoric logboats, dugout canoes and other vessels all over the world mark the beginning of shipbuilding and transportation traditions. The part of this important world heritage landscape is also Ljubljansko barje. This great story of transportation on water, which is closely linked to man's traditional coexistence with water and his life in aquatic environments, has a strong symbolic meaning since the vast majority of humanity lives near the seas, lakes and rivers. In the general story of shipping traditions, shipbuilding and vessel typology in the framework of world heritage, the simple prehistoric vessels as logboats, canoe, basket boats, reed boats, bamboo rafts, etc. are, have not been paid enough attention so far, although they definitely deserve it, as they represent the origins of the mankind's navigational tradition.

Keywords: Logboats, prehistoric vessels, heritage protections, museums, culture park, UNESCO World heritage, IT technology, integration, Ljubljansko barje, Slovenia.

1. INTRODUCTION: PREHISTORIC VESSELS

A special segment of research into shipbuilding traditions are the earliest vessels used by man in the past. These vessels from prehistoric times used to be made from trees trunks, most frequently oak (*Quercus*), pine (*Pinus*), silver fir (*Abies Alba*), spruce (*Picea*) and linden (*Tilia*) wood. Today similar vessels are still being produced in different parts of the world. In some regions they are an existential necessity, e.g. on some African and Asian rivers and lakes and some islands in the Pacific;¹ elsewhere they are part of preservation and protection of cultural heritage and tradition, e.g. in Estonia, France and Pennsylvania [1-3]. They bear a thematic mark and a local colour. Since what we are dealing with is natural coexistence between man and water—waterways being a natural communication network enabling faster transportation, particularly of cargo, compared to journeying on foot or on horseback—the credit for this invention cannot be given to a single people. It lies in the core of human heritage—an implement of key importance for the survival of the human race, most likely one with the longest history.

There are no available data on the overall number of the logboats discovered so far, but thanks to Beat Arnold from Neuchâtel (e.g. [4] and more his articles), who has been gathering information from his colleagues, it is known that more than 3000 logboats have been found in Europe. The oldest dates back to c.~8000 BC and was discovered in Pesse in the Netherlands [5], and similar were found in Africa [6] and China [7]. Several hundred of the unearthed logboats are prehistoric, many originated in antiquity, most of them, however, are medieval or new-era fabrications. The finds have most frequently been preserved in marshes and other aquatic environments, such as lakes, rivers and brooks, which prevent exposure of wood to the air.

With its geomorphological and sedimentation properties, the *Ljubljansko barje* (Ljubljana marshes), covering an area of 160 sqkm, play an important role in long-term preservation of organic substances in the earth. They are one of the European pile-dwelling culture sites, and have been placed, together with similar sites in other Alpine regions (Austria, Italy, Switzerland, Germany and France) on the UNESCO World Heritage list (WS: UNESCO — Prehistoric Pile dwellings around the Alps).

The pile- or lake- dwellers appeared soon after the last Ice Age and flourished between 6000 BC and 2000 BC. They inhabited places along water shores and on the water. By means of vessels, mostly logboats, they were able to economically exploit vast inundated areas and lakes and, thus, to prosper. The properties of the *Ljubljansko barje*, as

¹ Compare some water environments like: WS*: Bangui, Zambezi, Polynesia, Lugu Lake, etc. ... *hereinafter all websites will be cite as a websearch — WS: ...

described above, existed only until the mid-18th century when Empress Maria Theresia introduced agrarian reforms. In the course of extensive drainage works the marshes were crisscrossed with a dense network of canals in order to make this large area fit for agriculture. The exceptionally high number of vessels discovered here proves that the Marshes had been used intensively for navigation and economic purposes. The first find of a logboat in Slovenia was made at the time of hydromeliorization: the first record of a logboat discovery in 1827 was made in 1834 by Franc Hochenwart [8].

In the next years random discoveries were made so that at the beginning of the 20th century 19 finds were already recorded. A very important find was a 30-meter long and almost 5-meter wide Roman barge from Lipe near Črna vas. It was documented and described in 1890 by Alfons Müllner, curator of the Carniola Land Museum (e.g. [9] and more in his articles). The boat had sailed at the end of the 1st century BC and during the first half of the 1st century AD. This find and the ship's construction are still seen by experts as an essential intermediary link for understanding of Roman shipbuilding tradition in Europe [10].

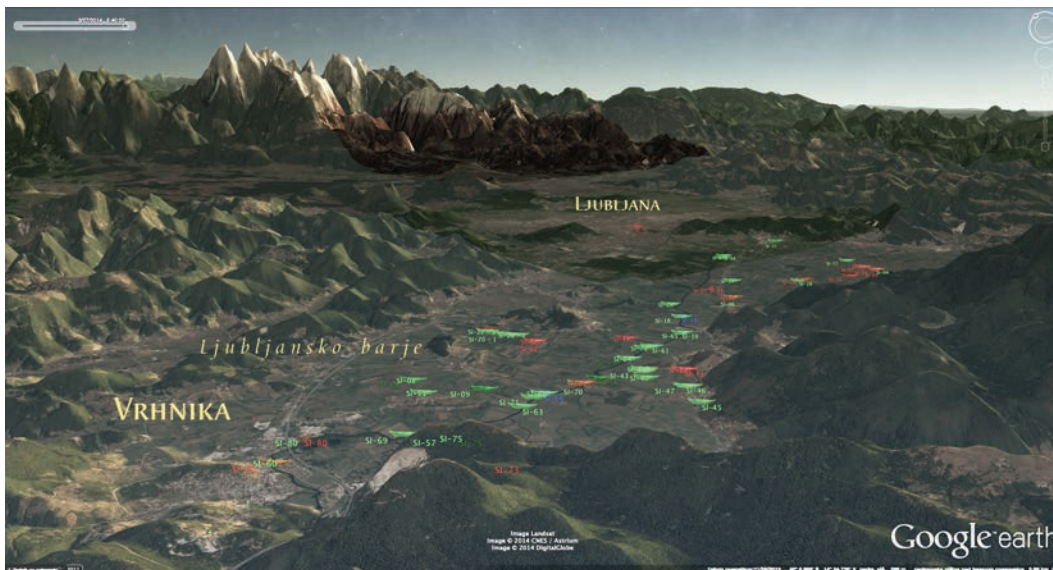


Figure 1. Distribution of 76 registered logboats on Ljubljansko barje, Slovenia. View to the NE. (Increase of altitude, factor 3)

In Slovenia (e.g. [11]; more about logboat research in Slovenia at WS: Miran Erič Academia) and specially in the *Ljubljansko barje* more than 95 finds connected with navigation have so far been discovered, registered and documented (logboats, vessels and oars). Only two logboats come from the river Mura region, the rest are all from the *Ljubljansko barje*. The density of vessel finds in the *Ljubljansko barje* is

Figure 2.
 Documenting a
 Roman
 logboat from
 1st cent. AD in
 the river
 Ljubljana at
 Vrhnika (Photo:
 Jože Hanc -
 Joc). *Bottom
 right:*
 Reconstruction
 of a Vučedol
 culture logboat
 from c. 2800 BC
 by Predrag
 Petrovič,
 ArtRebel9 Ltd.
 from Ljubljana



one of the highest in Europe, if not absolutely the highest (Fig. 1). Among the finds are 5 boats/ships with a flat bottom, suitable for shallow water navigation, 76 logboats and numerous oars and boat models.

The oldest logboat in Slovenia—the sixth or seventh oldest in the world—was unearthed during gravel excavation in the Mura backwater near Hotiza. It was carved c. 7500 years ago [12]. Fifteen of the logboats found in the *Ljubljansko barje* have been dated so far. The oldest was unearthed during excavations at the pile-dwelling site at Stara Gmajna. It was dated dendrochronologically to the last quarter of the 4th millennium BC [13]. Another 6 logboats are prehistoric, i.e. more than 2000 year old; five belong to the Roman period (Fig. 2), the rest are medieval or modern era artefacts.

In the last twenty years we have had 14 new vessel finds. About 130 year after unearthing of the Roman ship from Lipe, an exceptionally important discovery was made with another Roman ship, a subject of great interest and a new challenge for the international scientific community (e.g. [14]: more articles about ship at WS: Miran Erič Academia). The wealth of the discovered vessel and navigation heritage in the *Ljubljansko barje* region points at strong ties of the population with water, which helped them to survive and move around quickly. In view of the great significance of the preserved material heritage it is vital that we should present and popularize it. The *Ljubljansko barje* story may be representative, but it is only one of the many in the world.



Figure 3. a. Logboat on “Omo-Bottego” River, Ethiopia (Photo: Peter and Hinda Schnurman) [15]; b. Angyaqatak Skin Boat made 2007 by Joe Spein and Alexie of Kwethluk. [16]; c. Native Americans bark/skin boat originally called dugout [17]; d. New South Wales south coast, Australia. Workshop participants with their tied-bark canoes (Photo: David Payne/ANMM) [18]; e. Double triangular raft from Western Australia (Illustration: Xiangyi Mo) [19]; f. Bamboo raft from Kerala, India (Photo: Enjo Mathew) [20]

2. IMPORTANCE

Preservation and promotion of cultural heritage has advanced in all parts of Europe in the last two centuries, and particularly so in the last two decades. In the field of cultural tourism, which has lately been increasing as a result of greater awareness and higher demands of the general public, well-preserved and presented cultural heritage is becoming an important tool for obtaining a rounded-up picture of the ways of life of different cultures and peoples. The story, which can be discerned through the navigation tradition of the *Ljubljansko barje* and their material heritage in the form of logboats and other vessels, is closely connected to human cohabitation with water and water

environments. Since more than 70% of the world population live on the ocean, lake and river shores [21], vessel heritage and use of global communication arteries will interest most people.

The available data show that many logboats in Europe and elsewhere are preserved in collections of specialized museums. There exists a handful of experimental groups of archeologists and anthropologists (France, Estonia, Denmark, the Netherlands, Pennsylvania etc.) who have made copies of particularly notable dugouts upon their discovery. On the global scale, heritage institutions connected with water tend to be highly frequented and enjoy a great deal of public attention. Among the most prominent in Europe are the Vasa Museum in Stockholm, the Mary Rose Museum in Portsmouth, the Viking Ship Museum in Roskilde, Denmark, and other. The great stories they tell refer to particular places and times; Vasa and Mary Rose speak about two maritime superpowers of the 17th century, whereas Roskilde glorifies Viking conquests in the early Middle Ages. The North American canoe, now mainly fabricated from new materials (aluminum, plastic) tells the great story of North American Indians. The many "wonders of the world" are similar in this respect. The pyramids of Giza talk about the fascinating building competence of the people living 4000 years ago, the Neolithic and Bronze Age Stonehenge attracts with the yet unrevealed mystery of its symbolic meaning and meaning of space. But all these great stories are fixed in time and space! The idea of a thematic museum or a thematic park, dedicated to prehistoric vessels as global heritage (Figs. 3 and 4), has not yet been put in practice. The logboat as the root of man's liberation from a static way of live and the symbol of the oldest means of communication has not received its due consideration in the study of navigation traditions, shipbuilding, typologies etc.

Why not? Is it too simple? Is it perhaps not enough of a challenge for professionals? Or is it because it usually appears outside archeological contexts and is, therefore, less interesting for academic research? Maybe this vessel is not classy enough, a mere rural implement, too mundane to deserve attention? The prehistoric logboat, seen as a minor issue in the perspective of research ambitions, could not become a great story. However, since in the recent years IT has made such great leaps forward, it can now offer a highly complex multi-layer foundation for global interconnections and a joint approach in the research of man's first communication implements, starting from the logboat and other prehistoric vessels (raft- skin- basket- reed- inflated- log boat, etc.)



Figure 4. g. Inflated sheep skin raft from Lanzhou, Gansu Province, China (Photo: Meng Zhang) [22]; h. Reed boat from Nile River, South Sudan (Photo: Linda Sue Park) [23]; i. Coracle skin boat from Budha rock, Lhasa, Nepal (Photo Jerome Ryan) [24]

3. GLOBAL PREHISTORIC VESSELS RESEARCH INSTITUTE AND GLOBAL LOGBOATS HERITAGE PARK—A CHALLENGE FOR PROTECTION OF WORLD HERITAGE IN THE 21ST CENTURY

In the recent decades the increasing awareness of the significance of world heritage protection has significantly contributed to an update of theoretical premises and concepts and a broader understanding of heritage. It has ceased to be understood in a narrow sense as romantic collecting of artefacts, as practiced in previous centuries. We have become aware that our common heritage is tangible as well as intangible. Intangible heritage manifests itself everywhere in the world through folk festivals (e.g. celebration of new year, bonfires, worship of symbols, tomato festivals, etc.) and through understanding of traditions and activities, which have developed in the course of many centuries and millennia (arts, crafts and similar).

We have finally come to understand that the first object, the first implement, that man was able to use to gain a better control of his dwelling environment, employed primarily for traveling purposes and for conquering new territories played a crucial role in the liberation of man's body and mind. It made it possible for his physical body to travel much farther than what his mere physical existence would have allowed. By means of the first tangible communication tool—the logboat—man has freed himself of the feeling of impotence and restrictedness in space and time. By being able to use the arteries of the global water system, he was able to reach the most distant points of the earth. Today this liberation of the mind drives him on journeys into new unexplored territories, in a different types of vessels. A worthy tribute to one of the most important human inventions is the establishment of the Global Prehistoric Vessel Research Institute (GPVRI) and the Global Logboats Heritage Park (GLHP, Fig. 5).

Figure 5. Virtual representation of the GLHP by Nika Lužnik and Michael Klein, 7Reasons Medien GmbH, Vienna.



The task of both connected institutions is a revival of the prehistoric navigational tradition and promotion of awareness of the significance of this invention. It should have the following Units:

- I. *Global Prehistoric Vessels Research Institute (GPVRI)*: Since the *Ljubljansko barje* with its high density of finds are a region that has greatly contributed to the development of the idea, one of the seats of the global organization could be in Slovenia (with the departments on all continents), whereas the data and knowledge (on logboats and other prehistoric vessels of local and regional variations; raft, canoe, pirogue, reed boat, basket boat, inflated boat etc.) could be collected on all

continents. The premises would be in the immediate vicinity of the Technical Museum in Bistra. It would be equipped with interactive presentation systems, based on holograms and other cutting-edge information technologies. This would allow, for instance, interactive rowing [25] in a, so called, I-pool (pool managed by using artificial intelligence) and detailed virtual observation of prehistoric vessels from all around the world. The scientific research work carried out here would support other Units and Collections in this Heritage Park. The GPRVI would also be involved in experimental production of vessels (Fig. 2, Right).

- II. *Collection of original vessels*: The original vessels that have been preserved are being kept either in museum collections or are remaining, thanks to the researchers cognizance *in situ*. Some of them, which due to spatial interventions, could not be preserved *in situ*, should be presented to the general public for educational purposes. Today's practice in conservation of waterlogged wooden finds by means of polyethylen glycol or melamine is unfortunately deficient and unsatisfactory [26]. In order to meet all requirements for protection, safeguarding and presentation of a selection of original vessels, we should investigate the possibilities for development of, so called, I-aquariums—cells with controlled, biologically steered hydrological climate and the possibility for indoor and outdoor display of chosen artefacts. This idea should be put into practice by an interdisciplinary team of specialists in waterlogged wood conservation, microbiology, hydrology, mechanical engineering, computer science etc. It is based on prevention of decomposition of wood in the course of physical, microbiological and chemical processes. This could be achieved with the help of cutting-edge technology, effecting powerful water currents, cavitation systems [27], a thermo-hydrological balance and carefully implemented adjustments in microbiological balancing of water plants and animals.
- III. *Collection of copies and reconstructions of the oldest logboats and other types of the oldest and indigenous vessels (reed-, skin-, bark-, inflated boat, rafts etc.)*: The collection could expand gradually, from year to year. The beginning could be marked by reconstruction of the oldest Pesse canoe from the Netherlands or some regionally more interesting logboat. New copies or reconstructions of prehistoric logboats could be made at an annual festival every year. In a couple of years dozens of logboats would be carved and fabricated all around the world. These collections would be managed by

the local population of the countries that have embraced the idea of the global heritage park. These new boats could be used for organization of educational trips or “logboat country rowing”. In Slovenia they could, for instance, sail between Bistra, Vrhnika and Ljubljana. Each logboat would have a berth at Vrhnika, Podpeč and Ljubljana. The berths would be equipped with the data about the boat, its discovery and the circumstances in the time when it was in use. Along the navigation route there could be stations with accommodation facilities. All logboats in the system would be equipped with high-tech navigation devices, enabling interactive “real-time” monitoring from all over the world.

- IV. *Collection of non-european prehistoric and indigenous vessels:* One of the theme collections in the park would contain originals, copies and reconstructions of typical vessels from Asia, North and South America, Australia and other parts of the world (canoe, paruwa, habjaas, basket boat, reed boat, etc.). The European prehistoric boats would be, in a similar manner, exhibited on other continents to.
- V. *Collection of prehistoric and indigenous vessels of local and regional importance:* In Slovenia three stories with local colour could be presented:
 1. Presentation of early Roman barges of the North Mediterranean shipbuilding tradition (Lipe, Sinja Gorica); a minor permanent exhibition in the Information Centre—presentation of the vessels Arles Rhone 2 from Marseilles, Yverdon 1 and Bevaix from Lake Neuchatel and Lipe; fabrication of the vessels from Sinja Gorica and Lipe—real size reconstructions intended for tourist boat trips, cultural events and renting.
 2. Exhibition of the *čupa*—typical slovenian north Adriatic fishing logboat—and the fishing fleet. It is little known that in the 18th and 19th centuries Slovenes used to have the biggest fishing fleet of more than 400 logboats, so called *čupa* [28], in the Gulf of Trieste. The collection would pay tribute to this fishing fleet.
 3. Collection of extended logboats *Drevak*, typical of the Notranjska region: This type of logboat, so caled *Drevak* was used by local people on *Loška dolina*, *Cerkniško jezero*, *Planinsko polje* and the *Ljubljansko barje* during the last centuries. The latest studies of ship construction in Sinja Gorica [14] indicate that this shipbuilding tradition may have also originated in Slovenia and not in the Po valley, the alleged home of this type of boat. One specimen (5,5 m long) is preserved by Technical Museum of Slovenia, and

another (12 m long) in the Kravanje House in Cerknica. These boats have, interestingly, almost an identical construction as the vessels on the Suwa Lake, so called *maruta-bune*, south of Nagano in Japan, which have also been in use for several hundreds of years (WS: Kagami blog by Stephen Robertson: The Abandoned Skiff; Miyashita, H.: Ancient Ships of Japan. Master Thesis Texas A&M University).

- VI. *Theme paths on the Ljubljansko barje and around the world where people want to realize thematic park:* All sites where logboats were found on the Marshes should be equipped with "smart" boards with a description of individual finds (c.70 boards). Advanced computer technology would allow virtual visits of these locations. The boards could be linked to a computer game devised for this purpose, for instance, "Find the logboat discovery location". In addition, a prize winning (mobile stamp application) system could be introduced for visits of logboat sites. The "prizes" could be used for renting logboats for "country rowing" in all parks with available heritological facilities.
- VII. *Festivals, events and promotion department:* The department would be involved in organization of events promoting prehistoric vessels, e.g. "Logboats sailing race", attended by celebrities, athletes, artists, scientists etc. and accompanied by festivities. Similar idea was first time realised in 2014 by Cynthia Dunning Thierstein and Annemarie Willems from ArchaeoConcept with the "Log-boat festival with regatta in the bay of Biel/Bienne" (WS= <http://www.archaeoconcept.com/en/projects-2/close/>). A 20 km long racing route could, for instance, be set on the Ljubljana between Vrhnika and Ljubljana. These events could

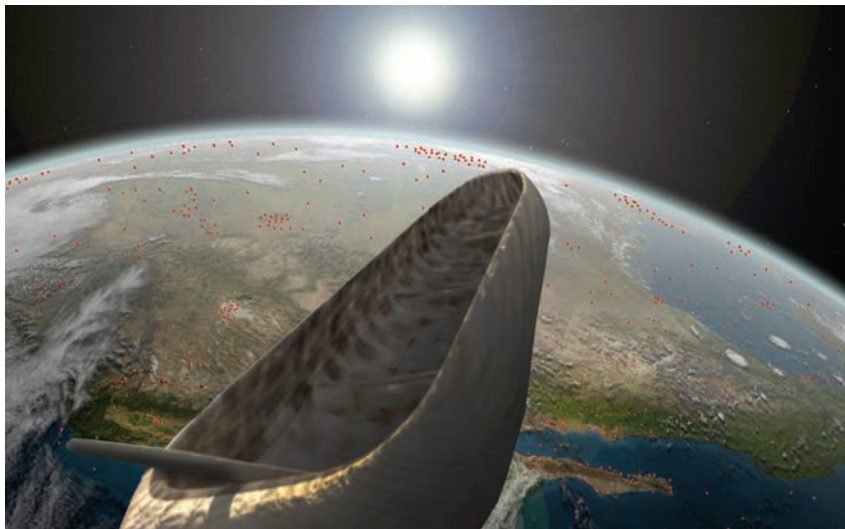


Figure 6. Culturalisation of space and a symbolic gesture of gratitude to one of the most important human inventions. Logboat trip to the sun. Red points on the earth indicate how the prehistoric vessels all over the world will be registered in the future.

become a tradition, featuring workshops on fabrication of prehistoric vessels. Sailing races could be transmitted to other continents, to locations with GLHP units. The department would also be responsible for organization of conferences and other educational activities. A specialist conference on prehistoric vessels, carpenting craft and similar should be held every year.

- VIII. *At the symbolic level the GPVRI has a double task:* The Cultural Centre of European Space Technologies (CCEST) focuses its activities on the programme for culturization of space, proceeding from the point where the *Fallen Astronaut* ended (WS: Powell, S. C., Shapiro, D. L.: *The Sculpture on the Moon. Slate*). The basic idea of the program is to enable artists and scientists to engage in varied theme research into human activities in space and to create an in-depth environment for modern and historic intercultural scientific research (WS: KSEVT: *Zavod Kulturno središčve evropskih vesoljskih tehnologij*).

At the symbolic level, the logboat is the prime human invention; it has greatly contributed to symbolic liberation of man's mind and the understanding that, in the physical sense, the water network system of the earth equals its communication and transportation network. Until the 19th century transportation by water had been the fastest type of transport. It had enabled man to explore the unknown. At the same time, it was an implement whose increased carrying capacity greatly exceeded man's physical abilities. In the future, space research will reveal that space is likewise intertwined with communication and transportation networks, and is eagerly awaiting the invention of a new *prehistoric vessel* to carry us into the unknown. Therefore, the CCEST programs for culturization of space should examine possibilities for realization of two symbolic actions: sending a copy of the world's oldest logboat, equipped with the most up-to-date measuring instruments, on the journey towards the sun, in gratitude for the gift of life; and sending another logboat in towards the brinks of the universe, into the great unknown—like the symbolic semantic message carried by Pioneer 10 to possible extraterrestrial cultures outside our solar system (Fig. 6; WS: GRIN: *Great Images in NASA, Pioneer F Plaque Location*).

4. CONCLUSION

Only a high concentration of important finds in a relatively small territory, such as Slovenia, has made it possible to recognize and understand the greatness of the logboat invention. At the symbolic level, it has liberated man's mind and enabled him to see the opportunities for conquest of new spaces, and consequentially, time. The first time a human being set off into the unknown, on a river or sea, he realized that there is nothing that can stop his journey. The same

liberated spirit made him start to with space research. Therefore, the logboat, from which all other vessels have developed, including the spaceship, deserves a symbolic tribute and global attention. And finally, a word on funding for the project. It's all in our minds. If we are able to pay 12M for just one of tank weapons to kill each other, we would have to find an budget form through heritage projects to ensure the realization of such a noble and human initiative.

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