

The Naval Origin of Greek Architecture and Sculpture

Plan of the book

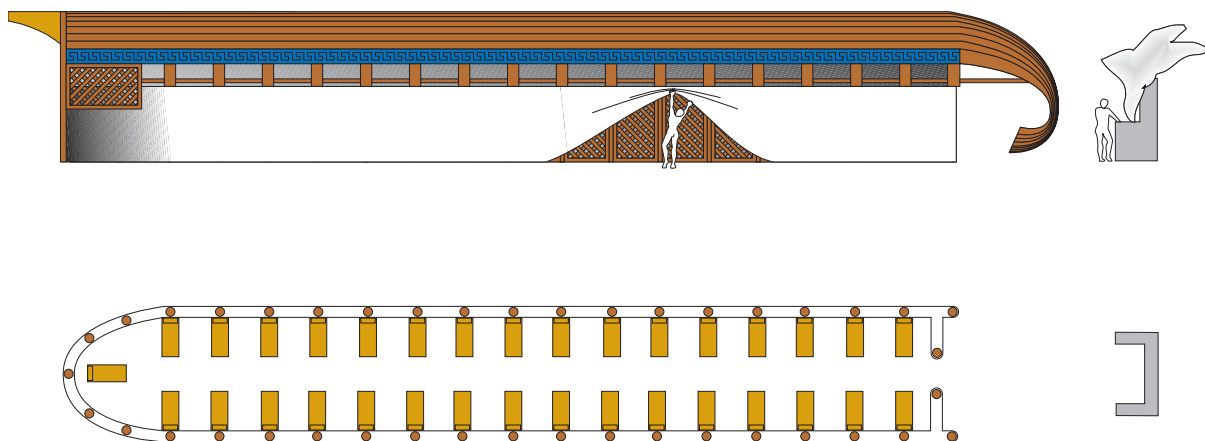
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1. The problem

The Greek temple is a poorly understood building. Many of its features lack a rational explanation. Although usually scholars refer to a previous and unknown architectural tradition of wooden buildings, perhaps there is a simpler explanation. The naval hypothesis argues that the Greek temple, and public buildings in general, originated from boats stored and turned over upon stays, and that the space under them was used as a living room by the crew overseas, as place of meeting and banquet in the seat of the fleet, and as a warehouse to store gear and merchandise that were object of the commerce.



2. The boats and the sheds of the *Iliad*

In the 8th century BC Greece restarts its maritime commercial activity, and the temple is born. There may be a relation between both facts. The Greek words for boat, *náus*, and for temple, *naós*, are very similar. In fact, *naós* could have been an adjective whose meaning was once “naval”, and which finally became a substantive: *ho naós*, “the naval”, translated by us as “the temple”. But which substantive did this adjective accompany? Obviously the original expression was *ho naós óikos* “the naval building”, which designates in classical times the arsenal in which boats are stored.

Usually scholars suppose that in pre-classical times boats were stored on the beach in their habitual position (with the keel on the ground), supported upon stanchions. But

actually turning the boats over could have been a preferred option, more secure, and not so difficult to carry out as it might seem. In addition, this would create under them cheap buildings available for many communal uses.

There is much evidence to support this hypothesis. The description of the settlement of the Achaeans out of Troy is bizarre (“he went back to his boat and his shed”), but it becomes clearer with the naval hypothesis. This way we can explain too the ethnonym *shiqalaya* “those who live in boats” applied to a section of the Sea People. But the main evidence is the enormous similarity between a boat turned over and stored on support walls and the structural and decorative elements of the Greek temple.

3. The Greek temple

The roof of the temple is the most densely decorated of its parts, because the roof is in fact a naturalistic sculpture of an overturned boat. The entablature represents the rail: the metopes refer to the rooms of the rowers, the architrave is the wooden screen that protected their head, and the triglyphs are the stanchions that support this structure. Other decorations (*guttae, mensulae, viae...*) correspond to structural elements of this part of the boat. The Doric and Ionic styles come from two different models of boat: Doric from the Greek traditional pentecontor and Ionic from a more modern galley that incorporates innovations of Phoenician origin.

The east and west pediments are the result of cutting the bow and the stern of the boat, and the shape of its top line is a cross section that reveals the structure of the shell. Upon the pediment are the *acrotéres*, a word that in naval terminology means “ram”; the sculptures, similar to those which decorated the bow and the stern of the boats, are upon them and, in front of them, is the *kúma*, i.e. the “wave” created by the advance of the stem.

The ground plan of the temple shows the elongated shape of the hull, and had three chambers: the first one, probably the stern, corresponds to one of the cut off ends, and creates the *in antis* entry; the central body of the boat, which corresponds to the *cella*, and finally the *áduon* or treasury, that corresponds to the bow. The peripter temple and its outer gallery asks for an additional explanation. The supporting walls, designed for the length and sleeve of a specific boat, became useless when this original boat was disused and was replaced by a bigger one. The second boat somewhat surpassed the size of the support walls, a circumstance which gave rise to the peripter gallery of this kind of temples. The architectonic word *gallery* must come from the word *galley*, just as the word *nave* comes from the latin *navis*, “ship”. The boat/temple is oriented to the west, i.e. the central and west Mediterranean, the goal of the 8th-century colonization. The altar in front of the east side of the temple was originally an open-air kitchen, a barbecue, to cook the meat consumed by the crew, who lodged in the provisional building constructed with the overturned boat. The role of the captain/priest in the sacrifice, in view of the treatment given to the dead enemies in the Iliad, suggests that the corpses of the enemies were symbolically or actually consumed.

The building known as *thesaurós* can be explained as a cut bow full with the most valuable cargo of the boat: metallic objects. The non-architectonical treasures consisted in sculptures made, according to the sources, with the bronze rams of the boats taken from the

enemies. In sanctuaries there is only one temple, the flagship of a regional or panhellenic fleet, and several treasuries/bows. This is the reason why cities postulated themselves as candidates to the leadership of the common fleet. The *thólos*, or rounded building, can be explained as the result of the circular superposition of the bows of 10 or 12 captains with the same power who maintain an egalitarian relation, although it can also represent a great metallurgical furnace.

The number and disposition of the columns of the Greek *hecatómpedon* temple are quite meaningful. There are usually 50 columns as there are 50 people in the crew of a pentecontor, excluding the two main officers. The 12 indoor columns correspond to the 12 marine soldiers who fought from the inside of the boat and the 38 outdoor columns correspond to the 38 rowers who rowed in both huts. Both main officers, the one on the bow and the one on the stern, can be absent from the representation because of political reasons (the repulsion that the Greeks felt for the monarchy), or assimilated to the sacred image (that sometimes is replaced by a column or represented upon it), or finally added to the count of the inner columns, in equality with the marine soldiers.

The crew of the boat is represented too in the set of sculptures of the Greek temple: the sacred image probably stands for the captain; the twelve gods often represented in the pediments correspond to the 12 marine soldiers of the inner of the boat; the 38 rowers as represented in the metopes, the place where they row; finally the rest of citizens, who do not belong to the crew, but produce the merchandise of the cargo, is represented in the Parthenon frieze of the Panathenaic festival as stevedores carrying their contribution to the merchant enterprise.

The golden shields dedicated by Alexander the Great in the Parthenon were hung on the architrave, the place that corresponds to the wooden screen at the top of the board, where usually the sailors hung their shields. The shields were 56: fourteen of them were hung on the east side, the ones who correspond to the officers and the 12 hoplites, and 42 in the other sides, on the axis of each column, which represent a crew of 21 rowers on each side.

Finally the disputed question of entasis loses its sense: there are no straight lines and square angles in the Greek temple simply because, due to nautical reasons, these simple geometric shapes are absent from a boat.

4. Anchor and dolphin. Greek sculpture.

The god's image occupies in the temple the place of the sacred anchor, the one for desperate situations, reason why we can suppose that the god's image derives from it. The divinization of the anchor is due mainly to its use as a weapon, what in classical times was designated with the term *dolphin*: a great weight that was thrown into the enemies' boat in order to split the hull. Probably it was lens-shaped; it was hurled from the top of a pole and was fastened to a chord or chain. The throwable sacred anchor was considered a god, and manned by the captain of the boat; the smaller anchors used by the other combatants received the name of *dískos* from the stem *di-* "god". This kind of weapon is what gave rise to the doric column and to the use, usual in the ancient cultures, of the column as a symbol

of the palace and of royalty.

The throwable anchor is the origin of the scepter that symbolizes royalty. The Greek term *scéptron* means "thunderbolt", not necessarily atmospheric: the ancients assimilated meteors to lightning, and they considered the former fragments fallen down from planets, and therefore sons of the gods. The meteorites were considered weapons of an enormous destructive power sent by the gods to help their chosen people at war. Pliny testifies the belief that meteors provided the victory in sieges and naval combats. This is the meaning of the Athena Parthenos, who in her open hand offers a *Niké*, or "winged victory", to the city of Athens. On the other hand, the gods of thunderbolt as Zeus, Jupiter and Thor were not gods of the atmospheric lightning, but of the naval combat.

We must suppose that meteoric rocks, such as iron and electron, were used to construct throwable sacred anchors. The captain's sacred anchor would be considered a god, and it would become the ensign of a fleet and a nation. But since all the sacred anchors –they were lens-shaped, spherical or conical– looked alike, it was necessary to give them a diverse and recognizable form. A possibility consisted of modeling the stone, covering it with metal, probably a gold leaf, until they were given the required form. Another one consisted of placing on them a figure, a practice that is the origin of the columns and the sceptres crowned by animal figures. Heraldics, then, derives from the different shapes assumed by the dolphin: lion, dog, flower, palm, penis, double axe, virgin, head, cup... all of them with some relation with navigation or metallurgy. The solar disc and the *djed* pillar of the pharaoh, which supports three lens-shaped anchors, have the same origin. On the other hand, the ethnonyms with the lexeme *tan* –present in the gods *Titans* "great weights", from the stem *tón-os* "weight"– refer to the shape of the greater sacred anchor, i.e. to the iconography of the tutelary god: *turdetani* "great weight in the shape of a thrush", *aquitani* "great weight in the shape of an eagle"...

In the 8th century BC the invention of the bronze ram, which probably comes from a big anchor hung on the outside of the stem, or from a lead bulb, makes the use of the dolphin obsolete. The captain no longer fights in the stem castle, but controls the ship seated at the stern, and the old *dolphin* or *stúlos* "column" reduces its size and, still at the top of a pole, becomes the *stulís* "little column" or ensign, that is the attribute of the captain and the identifier of the fleet. Flags will evolve from the use of the ensign pole as a signal pole, although originally the main element was the figure on the top of the pole. The bronze ram, and the stem in general, will maintain the iconographic motifs created for the throwable dolphin, since they are its natural continuators.

The Ionic capital does not represent an authentic dolphin able to be used in combat, but its evolved form, an ensign. In my opinion the Ionic capital is the result of the deformation by crushing of a palm leaf, a naval ensign that probably represents the Venus star over a half moon, as a symbol of the dawn or *anatolé* "orient". The ensign became deformed by the weight of the boat stored on it, which gave rise to the spirals on either sides of the capital and the two half palm leaves.

In the 4th century BC the catapult is born, which introduces a new change in the naval war tactics. This change is displaced to the capital, since this was the symbol of the artillery from the time of the use of dolphins. The Corinthian capital consists of a handful of basal

leaves of acanthus, and a noteworthy characteristic of the acanthus plant is that it shoots its seeds to great distances by means of the so called jaculatores, exactly as catapults do. The basket that supposedly is inside the capital contains the projectiles.

As we have seen, the three capitals are representations of the old lens-shaped stone anchors or their derivatives; we also indicated before that each column is the representation of a crew member and the capital a representation of his head. In the lower part of the capitals there is always a vegetable crown, which can only be the garland, *stéfanos*, with which the winners crowned themselves after a naval battle.

The small branch coiled on itself can be an improvised bun to load on the head a great weight. The winner of the combat is the one which does not lose his arms, and the captain who crowns himself with a garland is preparing to disembark carrying his lens-shaped anchor on the head and to show the others that he returns whole and victorious, from the combat. The word *captain*, formed with the lexem *tan*, means etymologically "great weight on the head".

The vegetal crown, interpreted as a bun to carry an anchor, allows us to explain the origin of the crown that symbolizes royalty in medieval times. Its name derives evidently from the Greek *koróne*, the "stern" from where the captain led the combat, and its form consists of a double hoop, that derives from the vegetal garland, crowned by three precious stones that correspond to the three original anchors of the stem.

The Egyptian boats of predynastic times already show animal figures in the stem, a reason why the sacred anchor can have been the origin of sculpture at so remote a time. But were the Greek anthropomorphic sculptures really used as anchors? The case of the Riace warriors suggests that they were.

5. Anchors and metallurgical furnace.

Until the Iron age the monopoly of the commerce of metals must have been a prerogative of the kings. This commerce was carried by aquatic routes. The Uluburun shipwreck of the 14th century BC and the existence of a "wet way" in alchemy suggests that the metal could be worked on the boat, probably using the furnace inside: using moderate heat and applying great weights to the metal, i.e. by template, which gave rise to metallic plates that later would be transformed into trays, shields and helmets. The captains/kings hoarded their wealth in the form of anchors, metallic ingots and metallic works of art. They paid or decorated their soldiers with fractions of the sacred anchor, the greatest ingot, which took the shape of bronze weights or drops of precious metals. The last ones would end up giving rise to the currency. As emanations of the sacred anchor, the weights and currency, the helmets and the shields repeated the iconography of the sacred anchor: lion, dolphin, palm tree...

The stone furnace on board is the origin of the iconography of the virgin. The womb of a virgin woman had the capacity to attract a such prolific god as Zeus and to conceive the son of a god, i.e. to attract metals like meteoric electron. This furnace, used to gild false ingots of stone or lead core, was the Philosophical Stone able to turn a vile metal into the divine one, gold. Used to gild bronze objects, such as shields, the furnace gave them immortality, i.e.

resistance to oxidation. To lay down into the furnace, as in the *incubatio*, infused a resistance to disease. The ovoid shape of the furnace made possible to consider it a head, like the one of Zeus, who was able to give birth, with the help of the metallurgical god, to Athena provided with all her metallic panoply. It could also be the Orphic Egg, in whose interior was Eros (the ability to alloy metals). The dome of a stone furnace could also be used as a throwable dolphin.

Lens-shaped anchors used in the template method for the crafting of metallic plates were considered divine and gave oracles and laws by means of a divinatory method similar to the old Chinese scapulomancy: some metallic plates would split when cooling off, and the resulting lines could be read as if they were written signs. Engraved lens-shape anchors of the Old Europe culture can have this origin, and probably the Delphic oracle functioned in this manner. This is would be the origin of the habit of writing the laws on metallic and stone plates, as well as the term *stéle* that designates them, of the same stem as *stella*, *stólos* and *stúlos*. The noticeable relation between the Latin words *lex* and *lego*, and between these and *legio*, in its acception of the ensign around which troops are recruited, must have the same cause.

The use of the anchor to mark the site where a human life has ended, although only temporally, is at the origin of the tombstones, which adopt the shape of anchors and temples, i.e. of stored boats.

At the bow, next to the ram, the sacred anchor and the furnace, was located the *artémon* sail. An engine, the one used to load and to unload the merchandise on board, can be the common origin for the anchor, the dolphin, the metallurgical furnace and the sail, an evolution that would have occurred already in the Egypt of the Old Kingdom. Exactly as "winged (sailed) lion" can be the etymological meaning of the typical Greek political form, the *ptó-lis*, also the country of the Nile could take its name from the "winged joist (Latin *caprea*)", *Aigú-ptos*. Some stem forms such as *str-/stl-*, *bol-* and *(c)lai-/ (c)lau-* were used to designate the anchors or some objects related to them, and gave rise to words with a great cultural weight: *astér*, *stólos*, *stúlos*, *stéle*, *émbolos*, *óbolos*, *obelískos*, *embléma*, *boulé*, *láis*, *leitourgía*, *Nikólaos*, *lis*, *ptólis*, *law*, *clavis*, *clava*, *club*, *classis*, *ekklesía*...

6. The Classical Culture

The naval hypothesis gives a new light to the study of the classical culture. *Classicus* means "naval" in latin, so a title such as *The Naval Origin of the Classical (i.e. Naval) Culture* would be a tautology, but would hit the target.

Besides the temple, other public buildings of the Greek cities also come from an overturned boat: the stoa, bouleuterion, palestra, et cetera. The Greek agora and the Roman forum are formed by the arrangement in string of stored boats that finally became political, commercial and religious buildings. Arranged side by side they gave rise to the warehouses of the west wing of the Knossos palace, and the series of *tabernae* of the Corinth agora.

The theory of the origin of the theater has to be revised. The tragic chorus composed by 12 people corresponds to the group of 12 marine soldiers of a *pentecontor*, and the 2/3 actors must be the officers. Theater is a competition between lyric choruses, i.e. between the

crews of the boats of a fleet, financed by a rich man who is fulfilling a duty, the liturgy or “work of the stone”. The actors act in front of a *skéné*, the ship-shed of the flagship that finally adopted the shape of a palace. Tragedies deal with the exploits of the ancient captains. *The Persians* is the only tragedy with a contemporary theme and it describes indeed the naval battle of Salamis. The final intervention of a *deus ex machina* is equivalent to the use of the definitive weapon, the dolphin, that in classical times Greek merchant ships let fall from the end of the yard.

The origin of philosophy has to be revised, too. The metallurgic captains/kings worked the only substances that can be recycled to their primitive state, that can defeat death and experience rebirth: the metals. As leaders and creators of an ideology they elaborated the scatologic theories that we ascribe to religion in other cultures but to philosophy in the Greek culture. The real etymology of the term philosophy probably is not “love of knowledge”, but “knowledge of love”, in reference to the alloy of the metals. The reflections of the first philosophers dealt with the nature of the substances (metallurgy), and afterwards with the nature of leadership and politics (leadership). Hellenistic alchemy, called indeed *philosophia naturalis*, takes over the metallurgic topic and ignores the reflections about politics that Socrates, the son of a shield maker, put at the center of the debate. In many passages in Plato is evident that metallurgy is the reference model, by comparison with which he elaborates his theories: the Platonic ideas, for example, are the perfect molds with which the craftsman elaborates imperfect copies.

Greek sanctuaries are situated at the seaside or at the final section of a navigable river. As sanctuaries are actually the base of a fleet, sports competitions must have been a way of achieving a better place in the composition of the fleet. The supposed funerary origin of the Olympic games points to the periodic renewal of the leadership of the fleet. The athletic trials were a preparation for the war on earth, but also, and perhaps mainly, by sea: the trial with the disc (whose etymologic meaning is “small god”) is only adequate to this kind of battle, and the jump trial, with the two legs united and the help of two left discs, is a boarding technique. The most famous military tactic, the hoplite phalanx, has its origin in the narrow deck of a pentecontor, where the 12 marine soldiers were arranged in a double column. The ground plan of the stadium presupposes the existence at its center of a stored flagship whose leadership is at issue. The throwable naval weapons –eggs, dolphins, columns et cetera– are explicitly represented in the *spina* of the Roman hippodrome.

The Roman triumphal arch represents the gateways to the army's arsenals. The central and greater gate belongs to the arsenal of the flagship, while the two lateral ones belong to standard arsenals which, on one hand, represent the total set of arsenals and, on the other hand, identify the central arch in contrast as the gateway to the arsenal of the flagship. The passage of the victorious troops through the central arch represents the return of a victorious admiral to his base.

As an emanation of the economy, the Greek society is a reflection of the composition of the fleet. On the top level are the shipowners: *nauarchoi*, *naukleroi*... In the second place were the marine soldiers, then the rowers and finally the producers. This is in accordance with the sculptural program of the Parthenon, and also with the four social classes established by Solon: *pentakosiomedimnoi*, *hippoi*, *zeugitai* and *thetes*. The Latin word *classis* means both

“social class” and “fleet”.

7. The Christian temple

As an example of the productivity of the naval hypothesis we will explain the Christian temple as a re-iconization of the arsenals of a fleet, particularly of the *basiliké náus* or "royal ship", which is at the origin of both the palatine and the forensic basilica. The basilica reproduces the arsenals, buildings constructed from Greek classical times to lodge in the ships. The palatine basilica, with a single nave, represents only the arsenal of the flagship. In the forensic basilica, however, there is a central nave of greater size, corresponding to the flagship of the emperor, and two or four lateral ones that correspond to smaller ships, and which probably represent the service that the local elites give to the emperor. The apse of the central nave is the stern of the flagship, and therefore the place occupied by the admiral/emperor. In spite of being a building used to house the ships in its interior, the decoration of the high parts of subsequent churches indicates the subsisting fiction that the ship is actually turned over and stored upon the lateral walls.

The Christian church, contrary to what is thought, is oriented towards the west, just like the Greek temple. The priest is the captain and is situated in the stern, assisted by the two helmsmen who manage the double rudder of the ancient boats. The faithful, i.e. the rowers lined up in long benches, sit facing the stern. The chorus of monks, that corresponds to the corps of marine soldiers, is at their combat place, the bow castle.

On the east side the apse maintains the circular shape of the stern, while the western side is cut –contrary to what happens in the Greek primitive temple– because in arsenals this side was the open gateway to the sea. The pillars that separate the three naves seem made up by the accumulation of minor ones, as if they were the result of piling up the oars. The upper gallery of the central nave represents the lateral boards. Each gap is a window by which the oars project to the outside, so that this architectonic element reveals itself as the equivalent to the doric entablature and its series of metopes and triglyphs. In the central line of the roof are the keystones, the ballast stones or anchors decorated with heraldic motifs that remind their old nature as throwable dolphins. On the west side, corresponding to the bow, the place for the main anchors, we find at the top of the wall the sacred anchor, i.e. the representation of the god in the figure of rose of light, the mystic rose. This it is the throwable dolphin of the ancient ships, remade as a goldsmith's work with the color and the brightness of different precious metals and stones. On its two sides we find represented, by means of an audacious metaphor, the two service anchors: the anchors of an stopped boat fall down into the deep sea floor; in the overturned boat that is the Christian temple, the bells fly towards the heights, and communicate with the boat by means of metallic chains. Often they receive the name of saints, as assistants to the main anchor, i.e. the god.

The transept is the transversal nave that unites the land side extremity of all the arsenals, and therefore the entrance and exit way for pedestrians. In spite of it, in the decoration of the lateral gates of the Christian temple a theatrical resource is used to maintain the fiction that you are entering the temple through the stern, as was actually done in the Greek temple. Both entrances are a scenography in which the appearance of the

overtaken boat is figured: the lateral columns and the upper arcs correspond to the correlative elements of the inner view of the temple in rigorous perspective, and in the tympan we find represented the bow with the sacred anchor (or the apse, i.e. the stern of the boat with the image of the god commanding the flagship). The biggest entrance to the temple, the one on the east side, is avoided, since originally it led into the water and pedestrians did not pass through it, only the ships when being hauled or hurled. In the Christian temple this gate is reserved to the passage of the religious images.

The ritual developed in the Christian temple, as in Greek and Phoenician religion, is a banquet. The captain manipulates the bread and the wine in the altar, the kitchen, and distributes it to the crew. In addition, an alchemic transformation is carried out, by which these elements become the meat and blood of a god. Once more we are led to the metallurgical work of gilding the metals, by which an ordinary metal became a copy of the great gold ingot owned by the king, and therefore an image of the god. The furnace of the flagship must be placed at the crossing point of the transept and the central nave; ancient ships that sailed in small fleets by night indicated their position by means of a fire located in the bow, generated surely in the furnace on board. Many churches have at this point a structure that corresponds to the furnace of the emperor's ship, a dome crowned by a lantern. Thus, the cathedral of *Hagia Sofia* must be the representation of an enormous furnace. The manufactured metallic objects were possibly kept within the furnace on board; they could be used as projectiles, and were interpreted as thunderbolts or fallen stars. Thus understood, the furnace would be as much the arsenal as the treasure of the emperor, and therefore the guarantee of the security of the nation.

While the priest/captain carries out his alchemic ritual, the monks/soldiers located in the bow play music in an organ, an invention by Ctesibios. But Ctesibios' pneumatic organ was also, and mainly, a pneumatic catapult, a war machine that could be placed in the bow or at the middle of the ship. Finally the faithful/rowers get up and sit down successively as in the *alla zenzille* style of rowing used in the late medieval and Renaissance galleys. When the faithful join palms together in prayer their torso adopts the shape of ancient lion figureheads, whose claws joined to create the ram. So as they are offering themselves as soldiers of the chosen people. On their First Communion children are dressed in sailor style, whereas girls wear a diadem that shows their disposition to produce and mainly to load on their heads the merchandise that will fill the hold of the boat.

The transition of the Romanic style to the Gothic springs from naval architecture: the pointed arch is a more realistic figuration of the hull of a ship, and the flying buttresses have a very long tradition in naval architecture; for example, to support the outriggers that project on both sides of a galley.

Not only the temple, but also the Christian hierarchy, and its myths and theology can be explained by means of the naval hypothesis. The assumption of Christianity by the Roman empire can obey to the need of integrating the Eastern Mediterranean sailors, a fact that happened indeed when the center of the empire was moved to the east.

Islamic culture, like the Christian culture, can be viewed as a continuation of the greco-roman culture. The mosque is, as the Christian church, a successor of the imperial arsenals: the main part of the building consists of a series of naves of equal size, *haram* or prayer

rooms, arranged in parallel as in the arsenal, whereas *mihrab* corresponds to the stern of the flagship, the admiral/emperor's seat in the Roman basilica. The characteristic horseshoe arch of Muslim architecture must be a representation of the shape of the hull of medieval Arab *dhow*s.

8. The naval (and mafioso) origin of the cultures

Greek culture, like the Roman and Phoenician cultures, was a naval culture because Greece lived facing the sea, but can we apply the same explanatory model to other ancient cultures? On the other hand, Greek architecture and sculpture are well explained by means of the naval hypothesis, but it is also undeniable that they are also heavily indebted to their Mycenaean precedents, as well as to the architecture and sculpture of contemporaneous Egypt and Orient. Then, did the Greeks adopt foreign elements and give them a absolutely new meaning, a naval meaning? Or did these elements already have their naval meaning in their original cultures, Mycenaean, Egyptian and Oriental? A brief analysis of some features of the Egyptian and Mesopotamian cultures shows that the naval hypothesis has to be much more productive than might be thought at first. To put only an example, the so called Asiatic model of production can be the product of a mistake: the primitive kings had to be transporters of merchandises that they did not own, and the archives were not the account of a redistribution, but the account of merchandises received and delivered, in the absence of monetary mediation. The overturned and stored boat was used as a warehouse for merchandises and, as the seat of the captain, it was also converted into a palace and a temple.

The new approach to Antiquity proposed here argues for the elaboration of a naval model of evolution of ancient civilizations. The origin of the prosperity of the societies is the trade with surplus production, which allows specialization and increasing productivity, but the surplus is only produced when there exist expectations to trade with it. It is obvious that trade attracts thieves. In an open territory theft is difficult, because is difficult to find the traders and these have many alternative routes; however theft is easy when traders have to pass a gorge. Great rivers encouraged commerce but, at the same time, the enormous differential yield existing between aquatic and terrestrial transport made the course of rivers like the Nile, Tigris and Euphrates great gorges to commercial effects.

The complete success of theft entails its end, because trade disappears. However a partial success of thieving is sustainable, but as a disadvantage it attracts other thieves, which brings about again the undesirable result of the disappearance of trade. At this moment the required conditions for the appearance of the state arise. One of the thieves offers himself to escort the traders who have to pass the gorge in exchange for a payment, in order to avoid being assaulted by the other thieves. On the basis of this transaction we find many principles of the state.

The *porta* (Latin word for "gate") is the gorge through which the traders have to pass: the course of a river mainly, but also a seaport, a mountain port, a gated bridge or the gate of a market or a city, which are the places where traditionally taxes on the traffic of merchandises have been taken. The **tax** consists on a proportional subtraction on the

transported merchandise; it is still a form of sustainable theft, but it goes along with the guarantee that there will be a unique, proportional and previously known payment. The **protection** of the merchandises and the traders against other thieves means the legitimation for the collection of the tax. Simultaneously it constitutes a declaration of war to the other thieves, and transforms the protecting thief in a warrior king: if he becomes victorious, he holds **the monopoly of violence**, and that is what assures peace and the security to the commerce. The **territory** of the state is a territory safe for the commerce, that reaches where the protection of the king reaches; it is a territory free of thieves or, what is the same thing, with only one reasonable and foreseeable thief. The place where the porta is situated becomes the capital of the territory: usually the section of the river in which the blockade is exerted, a fluvial port in which the traders are forced to stop and that becomes thus a market place.

In short, it is not by chance that the ancient kings show themselves cleaning the routes of monsters and bandits, the way Heracles does in his twelve works. The state is an institution that is born from commerce, lives on it, and simultaneously creates the conditions for its growth.

The king's success in the war against other thieves, and the growth of the territory covered by his authority, has a contradictory effect. At the center of the territory, far from the frontiers where the insecurity can still be noticeable, the king's legitimacy disappears and thus the continuity of the collection of the taxes is endangered. In order to avoid this source of problems the king develops several strategies for legitimation. Religion is one of them, since by means of it he projects over the subjects an idealized image of social order; nationalism is another one. Among the activities that create an alternative legitimacy, an outstanding one consists in providing additional services to the trade: the construction of public works (improvement of the ways, construction of wharves, walling markets...), and the juridic protection of the trade (standardization of weights and measures, vigilance of the market, commercial laws...).

All commercial transaction is an attempt of theft from one party to the other, in which, if there is a difference of power between the parties, the balance inclines to the more powerful one. The successive repetition of unequal interchanges can lead to the reduction of the number of commercial transactions, a circumstance which damages the interests of the king who indeed bases his prosperity on the continuity of the transactions. As an extension of the protection against the thieves of the routes, the king will protect his subjects against the thieves of the market, repairing the injustices committed by the powerful ones. Nevertheless, since his power needs the help of the powerful ones, he will reserve these exemplar correctives to the powerful people which would try to supplant him or refuse to collaborate with him. Finally we found united here four of the functions that habitually define royalty: war, religion, public works and justice.

The cities located in the course of the great rivers with greater possibility for becoming capitals were those located at the middle course, because most of the traffic passed at this point, but when trade expanded out of the river to the sea routes, the capital moved to the mouth, the new porta. This is the process that leads from Abidos, located in the center of the course of the Nile, to the later capitals located on its mouth, Memphis, Thebes and

Alexandria.

The first civilizations of the Old World were developed on the great rivers: Old Europe in the Danube, Egypt on the Nile, Mesopotamia at the union of the Tigris and the Euphrates, Mohenjo Daro on the Indus, China on the Yellow and Yangtze rivers. The conquest of a sea was more difficult, but Rome achieved it when it conquered the central gorge of the Mediterranean: southern Italy, Sicily and Carthage. Possibly it is not by chance that civilization started where four seas join, the Mediterranean, the Black Sea, the Caspian Sea and the Indian Ocean, and that this has been one of the most disputed places on Earth. Through the rivers flowing to these four seas, Southern Europe, North and Eastern Africa and southern Asia could trade. Afterwards the Islamic culture flourished when it made this enclave the center of an intercontinental commerce, and its decline began indeed when the Portuguese people circumnavigated Africa and Spain incorporated America to the world-wide commerce, creating new commercial routes in the Atlantic and the Pacific. Really, we have to study political history, until the arrival of the railway and aviation, not as a matter of owning the earth, but of dominating the rivers and the seas.