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"The Parthenon, Part I: From its Multiple Beginnings to 432 BCE"



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Assembly Room, A. K. Smiley Public Library

[1] (Numbers in red catalog the slides)

Fortnightly Talk #6

From Herekleides of Crete, in the 3rd century BCE: “The most beautiful things in the world are there [in Athens]... The sumptuous temple of Athena stands out, and is well worth a look. It is called the Parthenon and it is on the hill above the theatre. It makes a tremendous impression on visitors.”

Reporter: Did you visit the Parthenon during your trip to Greece?”

Shaq: “I can’t really remember the names of the clubs we went to.”

Architects, aesthetes, grand tour-takers from England, France and Germany all came to Rome in the 3rd quarter of the 18th century, where they developed on uneven evidence a newly austere view of the classical world that in turn produced the Greek revival across northern Europe and in America. Johann Joachim Winckelmann (1717 – 1768) [2], a self-made scholar of ancient Greek language and texts, was their unofficial high priest. In 1755 Winckelmann arrived for the first time in Rome, where thanks not only to his brilliant publications but also to a recent and, shall we say, a timely conversion to Catholicism, he was admitted by papal authorities to the Vatican galleries and storerooms (his friend Goethe said that Winckelmann was really “a pagan”). His contemporaries in Rome saw Greek civilization as a primitive source for Roman art, and had never troubled to isolate Greek art from its successor; Winckelmann reversed that, making Greek art and

architecture, especially sculpture—and especially of the young male form that he especially admired—not only distinctive in its own right but the font of the greatest Western art. [3] And those forms of building and body that he described with a famous phrase: “*edle Einfalt und stille Größe*” (“noble simplicity and quiet grandeur”) determined how ancient Greece has been received throughout the world ever since. In David’s paintings, in Wedgwood’s English pottery, in countless other examples, the ideals of Winckelmann’s great work, *The History of Art in Antiquity*, shaped how succeeding generations constructed their heritage from ancient Greece—a country, by the by, that Winckelmann himself never visited.¹

[4] Many of you have stood on the Athenian Acropolis and drunk in the classical beauty that Winckelmann and his many successors canonized for us. The elaborate gateway or Propylaia, the Parthenon itself, the Erechtheum that houses the most sacred sites on the Acropolis in a single irregular building, the exquisite small Temple of Nike: these are the buildings that best express the classical aesthetic and world view: [5] clean, noble stone that takes on subtly different hues as the sun marches across the sky; a purity of purpose; a clarity and unity of perfect order; a subordination of detail to the overall scheme of the artist; the real-yet-idealized human figure—all symbols of

¹ Honored by several European monarchs, he nonetheless met a sordid end: murdered in his bed in Trieste, allegedly for the medals Empress Maria Theresa had just awarded him.

Athenian cultural achievement and even the beginnings of democracy. Etc. That's where most of us begin, and end, with the Parthenon.

So let's *also* begin in another more down-to-earth place and see where it takes us. The Athenian Acropolis or "upper city" (better than "high city") is a defensible flat-topped rock that rises some 500 feet above sea level, and 230 feet above the surrounding Attic plain. [6] It's nearly 900 feet east to west, and 530 feet north to south, yielding a surface area of approximately seven and a half acres that slopes to the south and west from its northern high point. It's composed basically of limestone from the late Cretaceous, but with schist, sandstone, marl and various conglomerates under that limestone surface. It once formed the hardest section of a short east-west mountain ridge that was gradually broken down by tectonic action and erosion. And it is the only rocky outcrop in the greater part of Attica that, thanks to its unique morphology and a timely earthquake sometime in the second millennium, has significant underground water sources.

Another beginning point: the Acropolis was occupied off and on from 5000 BCE, but its first historically significant inhabitants were the Mycenaean Greeks, the legendary warrior-culture of Homer's epics. Athens was one of their smaller palaces, built according to legend by the city's leading hero, Theseus, and occupied until the tribes known as the Dorians invaded Greece from the north shortly after the Trojan war concluded. That invasion, or

more likely series of invasions, probably accompanied by overpopulation, drove the Mycenaeans east to the Ionian islands on the coast of Asia Minor. They took their epic tales with them, and four centuries later a poet we call Homer set down what became the final version of their conquests and tragedies. The Acropolis was their final mainland fortress, and, tradition claims, the only one never taken by the invaders. And it was huge, far larger than anything built after it: some 3000 square meters, including all the courts, on the same scale as the great palaces at Mycenae and Tiryns that you may have toured as well.

The historian Thucydides claims that the outcrop was known from early times simply as the “polis”; the “acro” came later (Book I). But the Mycenaeans had two other names for it: the “Kranaa polis” or “rock city” and, even more interestingly, the “Kekropia.” That second name points us toward a fourth beginning point: what the Rock has meant over time to the 150 or so generations of peoples who have occupied it.

“Kekropia”: Kekrops [7] was the first legendary king of Athens, one whose non-Greek name the Mycenaeans had some quality stories about. He’s credited with founding many things that Athenians valued—reading and writing, marriage and burial customs, navigation and justice, even bloodless sacrifice. The Greek geographer and historian Strabo (7.7.1) hazards that his name meant “face with a tail,” since he was depicted as a half serpent, half

man (more on that in a minute). Under his reign the famous naming legend of the city took place (here's beginning point #5): Athena and Poseidon competed for the honor, with the sea god offering power over the waves as symbolized by a salt water fountain he caused to spring up on the Acropolis, while Athena offered the even more practical olive tree. She won, and in doing so complicated her responsibilities as the city's patron goddess: not only was she a fierce warrior, but also the mistress of many domestic arts, especially weaving, smithing, horse-taming, chariot design, and even carpentry: she was, under this last hat, credited with building Jason's ship, the Argo.

The hybrid Kekrops' successor was Erechtheus or Erichthonius, meaning "Earthborn" or "trouble from the earth": perhaps he's derived from an old harvest deity. His entertaining story runs as follows: [8] the craggy old craftsman god Hephaestus, somewhat comically married to an Aphrodite who had little to do with him, tried to assault Athena when she came to him for some weapons advice. She fled, and despite his limp he pursued her until he caught her just over the Acropolis but, possibly out of practice, ejaculated prematurely on her thigh. Athena used wool to wipe Hephaestus' semen from her leg, and threw it on the earth, where Ge, the earth goddess, gathered the spilled seed, and bore Erechtheus, as it were, on the virgin Athena's behalf. [9] Gaia, shown in this kylix cup now in Berlin, is half

immersed in the earth as befits her nature. She hands the baby to Athena. The goddess in turn entrusted the baby to Kekrops' three daughters, known as the Dew Maidens (Aglauros, Pandrosos, and Herse). Aglauros, ever a curious Greek, opened the box containing the baby, and—here's Rubens' 1632 version [10]—was so shocked by his half human, half-snake appearance that she dropped the box and jumped off the Acropolis (as many later famous people were to do). From this tale the geometric age Athenians developed a mysterious ritual in which three young girls, assigned to live on the Acropolis for a year, had two responsibilities: first, they began—but did not finish—the weaving of the wool cloth used to wipe Hephaestus's semen from Athena. This was the sacred garment, the *peplos*, for the goddess, renewed each year in Athens' most elaborate and sacred ceremony, the Panathenaia. [11] Second, at the end of their year, exactly a month before the Panathenaia took place, the three took up a sacred basket or chest which they were forbidden to open and carried it on their heads down a crevice on the north side of the Acropolis to a natural underground passage where they would leave their burden undisturbed in a small shrine called the sanctuary of Aglauros. [12] The shrine marks the site where she fell. Then they would pick up an equally mysterious bundle and carry it back to Athena's sacred site. The Athenians called this annual ceremony—and I'm leaving a lot of complications out—the *Arrhephoroi*, the “carrying of dew,” and it continued

well into the classical era; young Athenian soldiers took an oath of allegiance in the precinct of Aglauros. It's important to remember these narratives, however, because these are the narratives that transformed the Acropolis from an obtrusive and not especially attractive rock into a religious shrine and a cultural center of Western civilization.

The contest between Athena and Poseidon took place on the north central section of the Acropolis, as did the stories of the early snake-kings, the Dew Maidens, and a succession of other mythic tales concerning fertility (the hero Bootes). This is the reason why a succession of temples were built on the north side of the Acropolis [13], roughly where the Erechtheum stands today. It's the sacred side of the Acropolis, where a series of wooden temples dedicated to Athena Polias, "Athena of the City," were built and where the old wooden cult statue or *xoanon* (*Zo-an-an*, from the verb meaning "to carve"), revered by archaic Athenians stood. That statue allegedly fell from the sky, a mark of its sacred nature and a way of accounting for its strange, even foreign, appearance. It may well have been a seated figure [14]—no reliable image or description has survived—but as this small sculpture copy suggests it was by later standards pretty crude. The figure held either a bronze spear with a bright, light-reflecting point, or—more likely—not a spear but a *phiale*, a shallow bowl for offering

librations.² It stood in front of the Erechtheum, and was the first thing to greet citizens as they came through the gateway onto the Acropolis.

As we come forward in time, think of all these criss-crossing foundations as palimpsests, succeeding one another but leaving traces of their predecessors. We know that there was at least one large 8th-7th century wooden temple roughly on the site of the Mycenaean palace; terra cotta roof tiles survive, as do sacred tripods from the same era. In the 6th century the sons of the culture-loving tyrant Pisistratus replaced this decaying old temple, known simply as Athena Naos (“temple”) with a peripteral temple of Parian marble to Athena Polias, the city’s peaceful protector, just east of the statue. Here’s a modern reconstruction [15], looking east through the columns of the Propylaia. It was finished in 525; Athenians referred to it as the “new” temple (see diagram). It was the goddess’s sacred precinct, and we have pedimental sculpture fragments from it, including gods battling giants and sculpture ensembles like the “olive tree” pediment. And after 507, when Athens became a democracy again, the Acropolis housed only the goddess and her priests. Politics remained below, honoring the famous dictum “Nothing in excess”: the heights are for gods alone.

However, the *first stone* temple to Athena, dedicated 566-565, was built in the 6th BCE, the so-called Hundred-footer or Hekatompedon, on the *south*

² According to Andrew Stewart it was first an olive stump, then a rough statue of the goddess, then a fine one: slightly under life-size.

side of the Acropolis, roughly on the Parthenon's site. Moderns nicknamed it the Bluebeard temple [16] because one of its pedimental sculptures featured a three-bodied man-serpent— another representation of a snake-king—on display now in the Acropolis museum. Around 500 this building was dismantled, possibly after earthquake damage, and a new stone temple begun on the same site. It required a massive building up of the south side slope [17], itself a remarkable engineering feat involving more than eight thousand two-ton blocks of limestone, in order to have enough surface area for a level floor without encroaching on the more sacred sites to the north. This temple was to represent the city's grandeur, while the religious center remained with the Athena Polias temple, the old wooden figure of Athena, and all the associated shrines and votive statues.

But the Persian invasion changed all this. In 490 Darius's troops were stopped at Marathon, Athens was spared, and to celebrate the victory the Athenians decided to continue this temple, what we can call the pre-Parthenon, in expensive marble rather than the cheaper limestone. It was begun on 8/31/488, during the Panathenaic festival, when the rising sun shone straight along the line of the proposed axis. We have portions of the bases and some column drums from this effort, because when the Persians returned under Xerxes ten years later they sacked Athens twice (480 and 479), [18] burning both the old temple to Athena and this new, half-finished project.

You can still see the dark-pink marks seared into the stone where the temple's scaffolding burned.

Xerxes in turn was defeated at Salamis and Plataea, but the religious damage had been done; the Acropolis's buildings had been not just destroyed but desecrated, and the Athenians leaders vowed that they would build no sacred buildings on the Rock until peace with Persia was secure—didn't happen until 449 BCE— and to use no stone from any of the earlier buildings to reconstruct the new temples. That's the reason we have so much material from those structures, not to mention the scores of votive statues that now fill a huge room in the new Acropolis museum: because they were used as filler in constructing new walls along both the north and south sides of the Acropolis, and so preserved. For the Athenians believed that the Persians would invade again and again, not recognizing—a forgivable self-importance?— that Xerxes had much larger economic and empire issues at stake with Egypt than with the irritating, mosquito-like Greeks. It's not a vow they kept perfectly—some of the old material did find its way into the new temple they were developing—but their intent was powerful enough to demand a building that surpassed all earlier efforts. [19]

So the stage is set now for the story of the Parthenon's structural beginnings—the decision to use relatively local Pentelic marble rather than stone shipped from the island of Paros; to make the temple of solid marble,

not the cheaper limestone with marble facing; and the choice of Iktinos and Phidias as the project's masterminds.

But first there's a seventh beginning we have to honor: the origins of the festival that would crown the building and bring together the civic and religious strands of Athenian culture into a single event: the Panathenaia. Theseus is its notional founder, but the festival took its full form in 566 BCE, again under Pisistratus's leadership. It was an annual event, but celebrated in its full glory as the "greater Panathenaia" only every fourth year, on the model of the Olympic games. It had a specific purpose: to deliver the freshly woven *peplos* to the sacred statue of the goddess on the Acropolis. [20] A shop was set aside in the Athenian agora, where a group of young, aristocratic women took the beginning efforts of the dew-maidens and completed the weaving over a nine month "full term" period. When they finished, they dismantled the loom, and displayed its heavy bronze feet at the door of their shop to mark the end of their labor. The *peplos* grew in size as the festival matured; by the turn of the century it was as big as a sail, and decorated with the primal battle for civilization—that between the gods and the giants which, as we noted, adorned one pediment of the goddess's old temple. The large size required that the cloth be draped on the mast of an actual ship, equipped with wheels and carrying a crew of bejarlanded priestesses and priests (think rose parade float).

On the early morning of the festival, in August (the first month of the Athenian calendar), a procession would form at the Dipylon gate at the city's western edge, where the Sacred Way from Eleusis began. What we would call grandstands were erected along the route, and the whole city—yes, women also attended—would turn out to celebrate the event. In the parade [21] were representatives of all of Athenian society: elders bearing olive branches, mounted youths, priests and marshals, matrons and young girls carrying baskets (echoing the dew-maidens again), animals being led to sacrifice, victors in the many games and contests (think bowl games) that accompanied the ceremony. Prominent citizens from each of the city's ten demes marched as well. [22] The procession moved slowly through the Agora—it's roughly a mile, but took hours—stopping for sacrifices at several specific altars (especially to Athena and Eros), and after circling the Acropolis, climbed its heights, where only genuine Athenians were admitted and where the huge *peplos* was presented to the old sacred, jewel-bedecked olive wood statue. Hymns were sung. A single cow was sacrificed before the goddess, followed by a mass sacrifice of 100 cattle (a hecatomb) at the large altar at the east end of the rock; their flesh was distributed to the citizens of each deme. All this was preceded by games, gymnastics, poetry readings and musical performances, torchlight parades, foot, horse and ship races, even a competitive "Pyrrhic dance" that, according to myth, Athena herself danced

after the defeat of the giants all took place on the surrounding days: the Panathenaic Games.

At last we arrive at the Parthenon itself. Well, almost, because the Parthenon's actual construction begins not on the Acropolis, or in the huge, raucous assemblies where the architects, contractors, and sculptors were chosen and supervised, but approximately ten miles to the north-east, where mainland Greece's finest marble deposit—and there are many—lay on the south slopes of Mt. Pentelikon. [23] Over time the Greeks had developed more than two dozen quarry sites on this mountain, and had already used its marble for the proto-Parthenon and a few other monuments in the city. Marble from the island of Paros had always been the preferred choice, but the decision to build the entire temple out of solid marble made shipping Parian marble prohibitively expensive. In addition, it was much easier to size and dress stone in a (relatively) nearby quarry. And there were aesthetic reasons: Marble (*marmaros*) from "*marmairein*," "to sparkle or shine," has a hard, shining brilliance that's ideal for gods and heroes. [24] It's also translucent, soaking up the sun's rays and diffusing them over a shallow subsurface that ranges from a few millimeters to over a centimeter according to its grain size and crystalline structure. Greek artisans knew that the slightly yellow Pentelic marble took on a soft, particularly beautiful reddish-gold sheen (*we* know that

it does so because of the unusually high amounts of iron in its composition).

[25] More important, its fine, uniform grain made it easier for both architects and sculptors to work with—it was always Michelangelo's first choice—and it had another quality which we'll get to in a moment. So Pentelic marble it was to be.

But saving thousands of drachmas on shipping costs didn't mean that transportation was easy, or cheap. First, we are talking about ten miles. This required a new, graveled road that ran continuously downhill—you can still see traces of it—and it required negotiating about a 2700 foot drop from the quarry site to central Athens before you had to somehow get the stone up the Acropolis. Special sleds were designed, with posts for tackle to slow the rate of descent. The average trip took more than two days. And, inevitably, not all of the stones made it; you can still see casualties [26], badly cracked, lying below a steep section of the road. Squads of oxen and mules pulled the sleds, as many as thirty teams. The biggest blocks, ones that broke even the largest sleds, were moved by putting an axle into their end sockets and placing twelve foot wheels on either side and rolling them painstakingly along. It's difficult to know the total weight of stone transported. Modern estimates put the weight of the entire structure at 100,000 tons, but much of that involves the foundation, or stylobate, stone and supporting walls that were already present. Athenians measured expenses comparatively: each trip cost 250-300

drachma (a drachma represented a *skilled* workman's productivity for a single day), and cumulatively the marble alone cost about the same as 400 warships. At a minimum, the engineers moved 20,000 tons of marble along this path: a remarkable feat. One particularly strong mule was awarded lifetime pasture when the project was done.

[27] The quarrying itself was managed with chisels—no diamond saws that we enjoy—then the blocks were split via inserting pieces of wood into strategically placed holes, and soaking them until they expanded and split the stone. Stones were dressed, as much as possible, at the quarry to save shipping weight, and those prepared for the highest parts of the building—especially for the architrave—were weighed to be sure that they could in fact be hoisted into place. (There was a sanctuary dedicated to Athena atop Mt. Pentelikon, and it's easy to imagine daunted stoneworkers beseeching the goddess for help in preparing her new temple.)

Once the stone arrived at the base of the Acropolis it paused before a special ramp that was built on the west side. Ropes probably made of hemp ran through a large pulley at the top of the ramp, with one end attached to the just-arrived cart and the other to a descending, counterweight cart pulled by oxen. [28] Blocks and column drums received final dressing on site, and then more rope and tackle joined forces with a huge wooden crane for lifting the stones into place. The peristyle went up first (you can see this order in the

unfinished temple at Segesta in Sicily, [29] which is nothing but a stylobate and peristyle). Then the internal structure of the temple itself, what the Athenians called the Naos—the cella and porches— followed. The Parthenon is still, to my knowledge, the largest building in the world constructed totally of marble.

Funding was a major strain, and it's important to keep the scale of the Athenian economy in mind; the imperial city's wealth, easily the greatest among competing Greek city-states, had a much smaller economy than the wealth represented today just in Redlands. The Parthenon was the most costly project ever undertaken by the city, certainly more than any military operation. It nearly bankrupted the Athenians to build it, together with its companion, the new Propylaia, and it would have done so without the supplemental income—really, the seizing, ostensibly on security grounds—of the treasury of the Delian League, comprised of 30M drachma, or roughly 11 tons of gold) in 454 BCE. Scores of accounts tablets have come down to us. Yet the Parthenon's close in size to this library; the UofR chapel would dwarf it, and it would disappear on the ESRI campus. A number of Greek temples were significantly larger, including a few earlier efforts.

The political architect of that monetary “liberation” (i.e., thieving), indeed of the whole redesign of the Acropolis, was the masterful Pericles. [30] And the politics were a definite challenge. We may suffer through the

consequences of representative, gerrymandered democracy, but in Athens there was no representation: every male citizen had a vote and the responsibility to appear in the assembly, which could have thirty thousand members on a given day. And there was no committee system: the full assembly voted on the annual budget for the Acropolis projects (we have many written stone tablet fragments of their annual reports), and voted also—ready?—on the architect’s plans, the building decisions, virtually everything. So Pericles was indeed a master. Yes, there was a “board of overseers” for each individual project, but they were taxed with carrying out Assembly wishes, not independent decision-making. And it’s true that many Assembly members were associated with the building trades. When the cornerstone of the Parthenon was laid in late July of 447, there had been two years of planning, and when it was finished just thirteen years later it represented an astonishing achievement in which forty thousand people had had a say.

The Parthenon also begins with the three principle artists hired to build it: the architects Iktinos and Kallikrates, and the sculptor Phidias. Iktinos [31]—his name means “kite” (the raptor, not the toy)—was an islander, a great innovator in temple design as island-artists usually were—and the successful builder both of the temple of Apollo at Bassae and the in-progress Hephaesteion in the Athenian agora.³ Kallikrates, [32] an Athenian, was his

³ It’s a mark of Pericles’ liberality that he supported a foreign master in xenophobic Athens.

right-hand man, and later the architect of the beautiful small temple to Athena Nike on the Acropolis. Phidias [33] was already a veteran of commissions from Delphi and from the Athenians—the Olympia temple and sculpture lay in his future. Not a bad team!

Of course they had to delegate the great majority of the work: Iktinos would, for example, make models for the moldings and capitals and then turn them over to skilled workmen to actually shape. There was so much work that many *metokoi*, “resident aliens,” were employed as well. This created seemingly insurmountable problems, since workmen from different cities used different systems of measurement. [34] The 4th century so-called “Salamis Stone,” now in the Piraeus museum, solves the mystery: it translated the different systems, like a mathematical Rosetta stone, into a common foot so that all the craftsmen—and the many slaves—could work together. The stone gives standard measures for the *orguia* (from fingertip to fingertip with arms outstretched), the cubit (from fingertip to elbow), the foot (from guess what), and the span (from tip of thumb to tip of little finger, with hand outstretched). This roots architecture in the form of the body. Most important, the two architects worked closely with Phidias to allow for the size of his ivory and gold statue of Athena, which was the center of the whole project and even more expensive than the building itself. That’s where we’ll end.

[35] But first, statistics: the typical Doric order temple was in a 6 x 13 pattern: six columns across the east and west ends, and 13 along each side. The Parthenon extended this to a remarkable 8 x 17 pattern, requiring 46 columns: innovative, yet traditional; fresh, yet venerable.⁴ [36] So it was larger, but by no means the largest Doric temple ever undertaken; it was kept in proportion to the site. It was roofed—you had to keep birds and dirt out of the sanctuary—and not with terra cotta like its predecessors but with marble sheet-tiles supported by wooden beams. The columns average 6'3" in diameter, but taper subtly and are each unique, as we'll see; that slimming and tapering is an Ionic addition, bringing eastern island aesthetics and a lighter sense of lift into mainland Doric design just as Athenians, themselves of western Ionian heritage, sought to integrate island culture into their empire. Their 20 sharp-edged flutes are typical Doric. [37] Even numbered columns center the entrance; odd numbered side columns seem to center the building and symbolically block entrance. It's in peripteral style (*peri-pteron*: "surrounded by wings"), which simply means that the colonnade proceeds all the way around the building. [38] It is 104'4" wide (roughly north to south), and 228'1" east to west. The proportions are 9 to 4. The so-called Golden Ratio, once claimed as the secret of the Parthenon's symmetry, doesn't in fact

⁴ Vincent Scully suggests that since the human eye can take in seven single units only with great difficulty, that the eight columns "force the eye to return again and again to the building. The observer is never satisfied; he can never quite take it all in." (175)

work, but 9 to 4 does: it's exemplified in the width of columns and the distance between their centers, as well as the height of the facade (from the base of the pediment) to its width.⁵ Greek temples almost always faced east, which means you see the rear of the Parthenon as you come through the Propylaea. [39] Inside the peristyle are the central buildings: the cella to house the goddess's great statue; the pro-naos, a little colonnaded entry porch; the opisthodomos or antechamber room behind the cella; and an unusual small treasure-room behind all that, and accessible only from the west. How was this planned? We don't know: no blueprints have come down to us.

Now for the magic: just like the stainless steel sheets of Frank Gehry's great Disney concert hall, each of the seventy thousand stones of the Parthenon is unique. There is no standardization, mainly because the canny architects knew that the temple was to be seen, not measured, and that the human eye does not perceive "straight" as straight. Famously, there is not a single straight line in the Parthenon. The base has a $6\frac{3}{4}$ " curve. [40] I have placed a book at the west end, walked to the east and looked back: I couldn't see it. Further, all these refinements had to be decided early on, even before the stylobate was finished: individual metopes for the frieze, varying by

⁵ The Golden Ratio is 1.61803399. It's represented in Greek by the letter phi, to honor Phidias who allegedly used it in his work, including the Parthenon sculpture. It also describes the Parthenon height <> width, but isn't carried through the building; it's also present in the Propyleia, which Phidias is credited with designing. This from Wikipedia: "In mathematics and the arts, two quantities are in the **golden ratio** if their ratio is the same as the ratio of their sum to the larger of the two quantities, i.e. their maximum."

fractions of an inch from their neighbors, were prepared long before the architrave that would hold them was mounted. They would be carved *in situ* several years later. The columns are taller and narrower than the Doric norm, and placed closer together; [41] this allowed Phidias to put his statue nearer the entrance to the fairly dark cella, where it would show to advantage. The Ionic school capitals and turned, fluted bases imitate furniture designs of the near East. They are “entastic,” i.e. they swell along the lines of the taper about two-thirds of the way up, and the four corner columns are thicker. The drums were centered using interlocking cedar pins, then secured with iron H-clamps coated in lead to prevent corrosion. And they lean, ever so slightly, toward the center; the side columns curves, [42] projected into the sky, would meet about 1800 meters up; the end columns even higher, nearly 5,000 meters. We know from an unfinished temple at Didyma that these proportions were worked out using lightly carved parallel lines on each drum; in the finished Parthenon these guidelines were polished out. Then comes perhaps the most magical thing: the tolerances. [43] You simply can’t see many of the stone seams; the minimum fit is 1/10th of a millimeter, and many are 1/20th, thinner than a human hair. We can see some of them now mainly because microorganisms have penetrated them over the centuries. When early 20th restorers disassembled the columns, they said that they could smell the cedar.

[44] It's part of our modern hubris that we shake our heads and say "How could they do that?" implying that such primitive technology couldn't do such things; the truth is that the current, well-equipped restorers of the Parthenon struggle to achieve the same tolerances. Iktinos and Kallikrates knew what they were about.

The Athena Statue

Phidias (c. 480-430 BCE) was already a famous figure in Greek architecture, painting and sculpture when the Parthenon commission came his way, but it was his close friendship with Pericles that secured him this highly competitive bid. His new, colossal bronze statue of Athena Promachos ("Athena who fights in the front line") already commanded the Acropolis, contrasting with the old olive-wood domestic cult statue of Athena Polias now carefully preserved in the Erechtheum just behind it. Home-bound sailors rounding Cape Sounion at the tip of Attica, citing Homer and his "shining" gods, looked for sunlight flashing off her spear-point.

Phidias' colossal cult statue is long lost to us, and we have only small models from vases, coins, and Roman copies to reconstruct, imaginatively, the original. [45] She stood, fully armed, toward the rear of the roughly 110 foot cella with its ashlar masonry walls, with a double colonnade running around

three sides. We know that she was nearly 41 feet tall, and her skeleton, if you will, consisted of a large beam armature rising from the cella floor, with iron supports for her arms. Shaped wooden blocks, attached to the armature by struts, further framed her life-like “body”. Then her clothing, with realistic drapery, was shaped in plaster (some in bronze) then covered with 1/16th to 1/8th inch-thick sheets of gold: detachable sheets. [46] Large jewels formed her eyes, while her feet, hands and parts of her shield and breastplate, with its head of Medusa, were of ivory. Art historians designate this combination of precious metal and ivory with a clunky word: “chryselephantine.” Realism in art mattered greatly to the Greeks: this was to do full, direct honor to the goddess, and also dramatize the wealth and power of the city—*her* city—that funded her replica. Greeks thought of statues as liminal creations in between life and the inanimate: some, though not our Athena, were chained to their pedestals to prevent their flight (especially Aphrodites!). [47] So Phidias’s statue filled the space she occupied, radiating mastery and overwhelming viewers. Both her making and her allegories reflected her particular brand of “wisdom”: not philosophical calm but the hard-to-translate Greek word *metis*, intelligent cunning, Persian-defeating wisdom: Odyssean wisdom, not Platonic. A rectangular reflecting pool in front of the statue kept the humidity level up and illuminated her beauty, since only the cella’s single door and two

smallish windows admitted light into her “house.” Here’s the great 2nd CE (110-180 CE) Greek traveler Pausanias’s description:

“...The statue itself is made of ivory, silver and gold. On the middle of her helmet is placed a likeness of the Sphinx ... and on either side of the helmet are griffins in relief. ... The statue of Athena is upright, with a tunic reaching to the feet, and on her breast the head of Medusa is worked in ivory. She holds a statue of Victory about four cubits high, and in the other hand a spear; at her feet lies a shield and near the spear is a serpent. This serpent would be Erichthonius. On the high pedestal is the birth of Pandora in relief...”

Description of Greece, I, 24.

Her shield contained yet another representation of the battles between the gods and giants, and between the Amazons and the Athenians, while her thick-soled sandals portrayed the mythic struggle with centaurs: all these stone narratives—the statue “speaks” to the viewer— proclaim the “civilization triumphing over barbarity” theme. Remember that the theme woven into the sail-size *peplos* of the Panathenaia depicted the gods’ triumph over the giants: the ceremony and the building are joined, and, as we shall see, not only here.

All of Athena's traits are brought together in one momentous figure: Her spear, the Nike ("Victory") statue in her right hand, [48] her left on her shield, the guardian sphinx and griffins on her helmet, and also the delicate weaving of her garment. We Winckelmann-trained classicists might think it overcrowded and over-determined, but the Athenians plainly did not.

Pandora's there because she's Athena's protégé, a brilliant weaver whose talent earned her gifts from all the gods—hence her name. And since Pandora was shaped from clay by the archetypal artist-craftsman Hephaestus, she may subtly stand for the power of artistic creation as well, a sly monument to Phidias himself. And finally, many portions of the statue were painted: the dramatized battle figures certainly, her hair, the decorative patterns on shield and base, all to make the statue more visible, more dramatic, more bright, more goddess-like. For Phidias, whatever Winckelmann thought, plain marble doesn't cut it.

[49] The statue's name, "Athena Parthenos," names the building as well: the Parthenon is simply the house of Athena Parthenos. Literally it means "of the Virgins," the final omega marks a plural, perhaps signaling the inclusion of the dew maidens and their cult followers in the virgin goddess's house and ceremonies. But the plural certainly includes her, and this Athena is not a young, innocent girl but a goddess of an aggressive purity, a disciplined, mature warrior maiden. At the same time it's true that the first mention in

writing of “παρθενών” as a name for the building comes from Demosthenes in the 4th century; 5th century Athenians, in the few surviving citations we have, called it the “100-footer” or simply referred to it as “ho naos,” the temple.

Her final cost is hard to determine precisely, but staggering regardless: one source says there were approximately 1500 pounds of sheet gold on the figure, another claims 2500 pounds valued at 441 talents or 3.5 million drachmas, not to mention gilding on the secondary sculpted figures on her shield, sandals and base. The structure, sculpting, and the ivory added maybe another 1.5 million drachmas to the cost. Classicist Oliver Taplin calculates the contemporary equivalent as £300 million. To repeat, Athena Parthenos, the center of the whole enterprise, cost more than all the architecture put together—and, unlike buildings, it was not on ready view. Most Athenians, we gather, loved the achievement, but there were many who were outraged at the cost, and called it the Greek equivalent of Pericles’ Folly.

Politics also played an important role in her design. Phidias anticipated, quite rightly, that he, and through him his patron Pericles, could be accused of siphoning off portions of the gold for their own benefit. So he insisted that the gold leaf be detachable, not only to foil any thieves or invaders, but so it could be weighed at any time and the sculptor’s integrity

proved.⁶ Phidias was also accused of vanity, using his own bald pate and Pericles's handsome face as models for the Greeks defeating the Amazons. The challenges came, several of them, and were refuted, over the four years it took to assemble her (442-438 BCE, when the statue was dedicated).

Many purists, Winckelmann followers, have found this painted, gilded, ivoryed, statue gauche, over the top; some even think it well lost. But I follow Mary Beard in seeing it as both civic self-assertion—look at what the Athenians have achieved, how great they are!—and also theological in the broad sense, not about creeds or orthodoxies but about divinity itself. The Acropolis gave Athenians at least three ways to see their goddess: the *mysterium tremendum* of the heaven-sent old olive-wood cult statue in the Erechtheum; the new bronze warrior-figure of Athena Promachos standing before that sacred building, towering over everything but the Parthenon itself, and finally the great goddess in her magnificent new temple, larger and more radiant than any human, sometimes visible but untouchable, and bedecked with all the many images of her power and her gifts to the city.

⁶ Thucydides claims that Pericles sometimes referred to the statue as a gold reserve, since it "contained forty talents of pure gold and it was all removable". (II, 13.5)

The Pediments. Short shrift!

[50] Pedimental sculpture adorned every Greek temple if its builders could afford it, and the narrow isosceles triangle of space occasioned by the angle of the roof challenged sculptors' ingenuity. They were among the last of the Parthenon projects, finished only in 432 BCE. The *kolossopoioi* or monumental subjects of the two pediments of the Parthenon are predictable: the east end—the entrance—shows the birth of Athena, the west the contest between Athena and Poseidon for the patronage of the city. [51] More than fifty figures filled the two spaces—many cults and interests had to be represented—and quite a few of our identifications are really guesses. Artisans first made small clay models, then full-scale ones working within a frame that replicated the 3 foot depth of the pedimental space. Specific blocks were quarried on Mt. Pendelikon for each figure, and roughly shaped there to reduce transportation weight. They were all sculpted in the round, despite the fact the backsides would never be seen once they were mounted; this was explicitly to honor the gods. And yes, these figures were partially painted, as was the backdrop wall (a light blue). Traces can still be seen on several of the surviving sculptures. Indeed, if they had not been painted the white brilliance of the newly-quarried marble would have been unbearable. No one could have looked at it.

[52] Here's a reconstruction, based on surviving fragments and the drawings of 17th century visitors, of the central section of the west pediment: Athena and Poseidon, framed by Hermes and Nike on the left, rushing to the goddess's aid; on the right the messenger goddess Iris and Amphitrite, Poseidon's wife, come to his. Phidias went for the dramatic moment; the olive tree spouts up between the two Olympians, and Poseidon's seawater fountain under his left leg already looks defeated. One scholar thinks this depicts the moment of Poseidon's defeat, when he threatens to punish the disloyal Athenians with a flood before a thunderbolt from Zeus intervenes; relying on a vase-painting from Pella, she thinks that the bolt may have been portrayed next to the tree (not shown in this recreation).⁷ [53] Here's one close-up of a surviving fragment: of Iris, now, for better or worse, in the British Museum. Look at the drapery, the motion and drama in the figure.

[54] The east pediment drama gives Athenians yet another—the fifth—image of their goddess on their Acropolis. Athena emerges from the head of Zeus, fully mature and armed, with the assistance of Hephaestus's hammer that cracks open the god's skull. Zeus had swallowed Athena's mother and his first spouse, the Titan goddess Metis (remember *metis*: cunning wisdom) after mating with her, then tricking her into taking the form of a fly. Metis, undeterred, crafted Athena's armor in her lover's belly—don't ask—and the

⁷<http://www.perseus.tufts.edu/hopper/artifact?name=Parthenon%20West%20Pediment&object=Sculpture>

racket so discombobulated Zeus that he called in Hephaestus with his hammer and gave Athena to the world in a flagrant allegory of male usurpation of female power to give birth. Religiously it isolates Athena from the exceedingly low status of women in Athens. [55] So here they are, flanked probably by Hera, seated behind Zeus, and Hephaestus, jumping back in astonishment from the effects of his hammer-work. We can't see him, but our old pal Kekrops, complete with his snake, sits and gazes at the wonder from a position near the far left of the group. Perhaps the most famous surviving fragment of all the pedimental sculptures is the exhausted horse's head [56] of the chariot of the moon-goddess Selene, sinking down into Ocean after its night journey: what a brilliant, dramatic way for Phidias to fill the seemingly impossible corner of the pedimental triangle, even overlapping its border. And, again, parts of it, along with all the other figures, were painted in bright colors.

The Metopes

[57] The metopes and the triglyphs stand above the architrave. Their form comes from the ancient wooden temples they deliberately imitate and preserve, with the stone 3-ported triglyph representing the old wooden roof-beam endings, and the metopes— “between the eyes”— filling the gaps between them. There are 92 of them on the Parthenon. They average about

four feet in height and a little more in width: to repeat, they're each unique in dimensions. The blocks were originally about 14 inches thick, and the reliefs vary, with the deepest carving being about 10 inches. They were usually left uncarved on more modest temples, but here they are beautifully crafted and then hoisted into place so the work above them can proceed. This makes them the first Parthenon sculptures, chronologically—they were all finished by 442 BCE—and scholars have identified the hand of several gifted sculptors; in fact more than a hundred artists, apprentices and masters, must have worked on the site, and, being Greeks, were highly competitive with each other both as individuals and as men from a particular region. Phidias was Argus-handed, and testosterone no doubt played a large role in its sculpture's excellence. It's a tribute to his command that the final products are so uniform and harmonious.

The metopes have an important practical function: to keep birds and dirt out of the temple. They were decorated with relief sculptures depicting, once again, civilization's archetypal triumphs over barbarity and chaos: on the west end it's the Athenians defeating the Amazons; the north gives us scenes from the Trojan war; the east, over the entrance, has the gods once again defeating the giants' attack on Mt. Olympus. The south side has the best preserved set: the Lapiths, a Greek people from Thessaly, battle the Centaurs. These man-beasts, invited guests at the wedding of Lapith King Perithoos, got

drunk and tried to carry off the bride and her company, losing all self-control like the Persians who had sacked the proto-Parthenon. Perithoos was the closest friend of Theseus, who attended (the Athenian link). All these traditional sculpture-subjects maintained a sharp divide between the barbarous—which meant either foreign or uncivilized, usually both—and the Greeks, who only with the maturing of tragedy at this same time began to detect the barbarous within Greece itself, and even within individual Greeks (e.g., Oedipus).

Let's just look at one metope panel, from the south-west corner, as photographed from its new home in the spectacular, 130 million euro New Acropolis Museum. [58] It's among the more contemporary, less archaic carvings. [59] It portrays a centaur apparently defeating an overpowered Lapith youth, yet you can see a wound in the creature's left thigh that may balance out the fight. The young man's right arm held a spear and was moving forward into his assailant. You can see on his pinned-down head [60] another, smaller hole where a bronze metal headband was attached; nearly all the Lapith figures had one. The motion, the struggle, seem active, not static as in older archaic forms; this is classical art at its height; [61] muscles undulate rather than simply buckle, and the centaur is not a generalized type but a definitely older individual, with receding hair, a little belly-flab, but a strong back and shoulder. The sculpting of the centaur's right arm and especially

their legs—[62] here's the Lapith's right leg: check out the muscles—is masterful, and his slightly elongated calf would look perfectly proportioned from thirty-plus feet below. [63] Neither has a shield—it was a wedding party—but both grabbed weapons that were also made of bronze, and yes, the figures were painted, [64] and in detail: the lad's cloak, their hair (see the centaur's scalp), the centaur would be two-toned to mark his hybrid nature. [65] The background was probably whitewashed. [66] 92 of these.

THE FRIEZE (*zophoros*)

[67] Finally, the famous Ionic frieze, quite possibly a late addition to the project, that ran for 524 feet under the coffered ceiling and around the entire cella.⁸ It contains 360 human forms [68], 231 horses, including teams of four pulling 22 individual chariots, 14 oxen headed for sacrifice, 4 rams and various items of cult paraphernalia. Each of the 115 panels is a meter tall, and its width matches the wall block right below it; this necessitated scale adjustments for standing and riding figures, and the animals, especially the horses. [69] It stands forty feet above the ground, and unlike the metopes is uniform in style—Phidias's style. [70] Together they form a continuous narrative, a huge votive relief, that begins in the southwest corner and runs in

⁸ Detail: The inner colonnade of the cella's porch forced the architects to place those sections of the frieze not on the wall of the cella, but above the east and west porches, though at the same height as the rest.

two unequal parts along both sides and meet over the east entrance, right above the massive wooden double doors that gave access to the goddess's image. The longer side runs along the north, where it was easier to see. No other Greek temple has such a frieze.⁹ And its impact on sculpture in Athens, and around Greece was immediate: grave steles in the same style sprout up from 430 BCE forward.

The subject, most scholars agree, is the Panathenaic procession in all its dramatic glory. But this can only be a conjecture. It was first proposed by two 17th century travelers and sketch artists: surprisingly, *no* ancient writing that's come down to us mentions either the frieze or the metopes, even though thousands of knock-off tourist copies of the sculptures have been found all around the Mediterranean, especially in Italy.¹⁰ We have cattle being led to sacrifice [71], mounted youths, girls with baskets, water carriers, musicians, tray-bearers, marshals, elders, [72], at the climax even seated gods (including an Athena), facing opposite directions to watch the procession approach its goal: arguably a microcosm of Athenian society, animal, human and divine. But there are problems: several elements of the procession—too many cavalry [73] and no hoplites, short hair on traditionally long-haired

⁹ However, Persian temples at Persepolis do, temples that Greek sculptors worked on and which suggestively symbolize Athens as the Persepolis of the West and Athena's power over the Eastern enemy.

¹⁰ The intrepid travel and sketch artist Cyriac of Ancona gave us not only the first written account of the frieze but the first surviving drawings of the Parthenon as it appeared in the 1440s CE. Interestingly, he was the first traveler to completely ignore the Christian make-over, in effect looking right through it to the classical original he most admired.

cavalrymen (think Custer), [74] an excess of young men, and the absence of the wheeled boat carrying the *peplos*: these have opened the door to many interpretations, including the most provocative: that the frieze depicts the blood sacrifice of the dew maidens.¹¹ Most plausible to me is Andrew Stewart's suggestion (1990) that the frieze incorporates elements from earlier versions of the procession, including the off-year Panathenaia, when the great wagon-boat wasn't used, creating an archetypal, inclusive feeling and giving us a gracefully idealized recreation of the ceremony rather than a direct imitation.¹²

There's also a serious artistic problem: it was very hard to see it, since no direct sunlight ever touched it and the peristyle colonnade not only blocked a

¹¹ Joan Connelly (Fine Arts faculty at NYU; MacArthur winner) argues that it shows the sacrifice of the daughters of Erechtheus, done to protect the city from invaders on the instructions of the Delphic oracle. The Athenians won, but Erechtheus was killed. One main source for this is a surviving fragment of a tragedy by Euripides, *Erechtheus*, in which such a sacrifice is dramatized (the main part of our 250 lines were found on an Egyptian mummy wrapping and published in 1967). One sister is chosen to die, and the others walk with her in solidarity, imitating the bravery of the soldiers, and volunteering to die along with their sister. Connelly argues that the frieze shows Erechtheus dressed as a priest and accompanied by his wife, Praxithea, about to sacrifice the girls. The *peplos* shown on the east frieze is really a shroud, and the two women with "cushioned stools" are really carrying their own shrouds. Connelly also says that the frieze shows the youngest daughter, to be killed first, unfolding her shroud for the "offstage" killing. So she's claiming that this central monument of Western culture was built not to glorify Athenian democracy but the primitive and irrational act of female-child sacrifice. And this also places heroic women at center stage in Athenian narrative. Connelly's accused of "code-cracking," finding secret messages a la the Sphinx, and claiming that a work of art can have only one meaning. Other scholars argue, and the great majority agree, that the small figure is male, not female, and that the cloth is being folded (a major objection, since it appears to be right), not unfolded, and that there is no altar, no priest with a knife, or the other iconography that accompanies depictions of Iphigeneia or Polyxena. This is a pageant, not a "drama," and pageants aren't self-contained in meaning, but extend into the city: the frieze as part of the parade. Connelly's new book (2014) reviews all her arguments, and adds several strengthening ones: the debate goes on.

¹² One other tempting code-cracking interpretation comes from the venerable classicist John Boardman (1977), who calculates that the number of horsemen and figures in all the chariot sequences add up to 192: the exact number of Athenian dead at Marathon.

good deal of the view but cut off much of what light was available. Plus ancient visitors had no civic or religious reason to circumnavigate the building; we see the frieze on display far better than any peer of Phidias. One of the effects of this is to force the viewer to be very active in constructing the continuity of the story; as you walk by it seems to move: what Ian Sinclair terms a symphonic poem or a drama in stone. The solutions: brilliant, naturalistic carving—the figures seem to emerge alive from the marble—and the use of color. Let's look:

The climax of the frieze comes, to repeat, above the east entrance, where the *peplos* is presented to the goddess. [75] At one level, it's the festival's rite of passage: the *peplos*, of the smaller size used in the Lesser Panathenaia, is presented by a boy acolyte (naked butts allowed) to a priest of Athena wearing his traditional long ungirt tunic (barrelfuls of scholarly ink have been devoted to the gender of that little butt). He in turn will present it to the goddess. To the left of the priest stands a woman, the priest of Athena Polias, receiving a cushion-basket from one of two girls approaching her, most probably the Arrhephoroi. The second girl is also carrying a bronze footstool with brass feet, symbolizing the loom on which it was woven. Athena and Hephaestus, creators of Pandora, are on the far right. At the same time it can be read as the primal scene of the festival in the city's mythology, with the two daughters of Kekrops, Aglauros and Herse, who violated commands and

looked into the basket they were carrying and saw the snake-baby Erichthonius. In this way of seeing the temple-boy becomes the young Erichthonius, founder of the first festival, receiving the *peplos* from Kekrops himself. So, another palimpsest: both imitation of the familiar and equally a symbolic recreation of the myth and ritual that climaxed the city's greatest annual festival. [76] Ian Sinclair: "The principal theme of the Parthenon frieze taken as a whole is the celebration of a festival where the present mingles with the heroic past and mortals seek to communicate with the divine." (p. 39)¹³

To conclude, I'll pose the question, by many over the centuries: What, was the brand new Parthenon *for*? [77] There were no priests or priestesses attached to the structure, and no formal worship took place inside its walls: religiously it's at best a newcomer to the scene. Sacrifices were always made outside, for obvious reasons; a hundred dead cows would not improve the look or smell of the interior. But, unlike most temples, there also was no altar directly outside the entrance; it was off to the north, on the more sacred side of the hill. [78] there's a further mystery that archeologists still wrestle with; there was a small altar, of purpose unknown, built about 2/3 of the way down the north peristyle of the Parthenon, breaking up the symmetry we prize and bringing religious practice, apparently, closer to the heart of the structure. That's just one more reason that the purist classicism of Winckelmann and his

¹³ These crucial panels are now in the British Museum; Lord Elgin found them not in situ but built into the Acropolis fortifications.

inheritors were off the mark: the Parthenon by any measure was ostentatious, even show-offy, garish in places, and much of it painted in bright colors that would have appalled Johann Joachim. Yet in another, perhaps more fundamental, way he was right: when we put all the above religious functions and narratives together with the artistic, civic and, yes, imperial achievements it embodies—beauty and power together—its frozen harmony and subtle perfections do give us the summa of Athenian culture. Architecture scholar Vincent Scully notes that it's visible from miles away in any direction, and termed it "a great ship turning and listing" in the rush and fullness of its dynamic, a building that defines the space it occupies rather than simply filling it. (1962: 177-178)

[79] So that's the end of the Parthenon's ten beginnings, but only the beginning of its long life. It's the most copied building in the history of the West: the French Parliament, our Supreme Court, hundred of municipal buildings, especially in the South—and of course its complete replica in Nashville. But that's the beginning of our second story, and the end of this one.

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