

## **The Middle Horizon in the South: Tiwanaku, an altiplano agrarian state**

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- We have so far mostly ignored the southern highlands and altiplano
  - Now we will go back and fill in events there that led up to the Middle Horizon
  - the story there is still not too clear
  - chronology is still not well controlled
  - lots of exciting recent and ongoing research, but we still mostly know just limited things about particular sites and times, with a lot of holes
  
- Altiplano environment
  - Very approximately, a broad plateau between bands of jagged peaks on the Pacific and jungle sides of the Andes
    - high, but many areas not as mountainous and broken up as the rest of the Andes
    - areas of low, rolling hills (located at high elevation)
    - wide valleys with flat bottoms and more gradual slopes on the sides than in other areas
    - flat areas around some of the edges of Lake Titicaca
    - interspersed with steeper slopes and mountain peaks
  - lots of rain
  - cold winters and nights
  - generally covered in grasses, few trees or bushes
  - too high, wet, and cold for many crops, including maize, coca, peppers
  - but very productive for others, like potatoes and quinoa
  - camelids flourish on the grassland
    - wild herds of guanacos and vicuñas for hunting
    - vicuñas were (and still are) captured, sheared of their fine wool, and released
    - llamas and alpacas are herded as domestic animals
  - Lake Titicaca
    - huge
    - margins are particularly good for farming
    - margins also support reeds, used for boats, mats, houses, fuel, food...
    - good fishing
  
- there was a long, gradual development of cultures in the altiplano
  - settled farmers who also kept camelid herds
    - some lived (and still live) in widely dispersed, small farmsteads
      - difficult to locate and study archaeologically
    - some lived in small villages
  - eventually started building ceremonial mounds
    - each typically has a sunken rectangular court on top
    - quite different from the U-shaped tradition of the central and north coast
    - and quite different from the Kotosh tradition
  - Chiripa site and tradition during the Initial period (~1400-850 cal BC)

- Chiripa was one of many villages with its own ceremonial structure
  - a mound supporting a sunken rectangular court
  - surrounded by special-purpose adobe buildings facing into the court
  - with sliding front doors (!) and unusual niches inside
  - not domestic, presumably settings for ritual, storing ritual paraphernalia, short stays for ritual purposes, etc.
  - probably had a stone monolithic sculpture standing in the center of the court
- Chiripa had the largest, or among the largest, of these ceremonial structures
  - and was probably among the largest of the villages of this tradition
  - but there is little reason to think that any one site had more than local importance
  - nor to think that there was a well-developed elite, economic stratification, political hierarchy, etc.
- Pukara site and tradition (~400 cal BC - 100 cal AD)
  - part of the same tradition as Chiripa, but at a later stage
    - located at the other (northern) end of Lake Titicaca
    - early occupation at Pukara and nearby sites had Chiripa style pottery
  - some relatively large towns
  - elaborate pottery
    - incised polychrome decoration
    - often showing felines, etc.
    - "incense burners" (may have been used to burn other kinds of offerings)
    - ceramic trumpets and other ritual gear
- Pukara became an impressive ceremonial center
  - located at the edge of a wide, flat valley bottom well suited to farming
  - two giant natural rock outcrops with a hillslope sheltered in between
  - this slope was terraced, with nice stone retaining walls
  - it and the flat area in front of the slope supported a series of ceremonial features
    - an early one was a modest stepped platform mound
    - later, a series of sunken rectangular courts surrounded by rectangular "houses", very similar to the earlier court-and-room layout at Chiripa
    - the sides of the court and the bases of the walls of the surrounding "houses" were made of well-cut stone blocks
  - probably was the ceremonial, maybe loosely political, center for a region at the northern end of the lake
- Yaya Mama stone sculpture style
  - various forms, but especially standing monoliths or stelae
    - such as those standing in the center of sunken rectangular courts
  - characteristic low relief carvings
    - sometimes human-like figures
    - sometimes two on opposite sides that could be male and female
    - wavy or spiral "snakes" or "arrows"
    - cartoonish faces

- clearly a single tradition with specific iconography, but not highly refined - this is not Chavín quality stonework
- found in many places around Lake Titicaca
  - although some sites became large centers, none was predominant over more than a fraction of the lake shore
  - probably numerous local ceremonial sites, rather than one regional center
- essentially no contact with Initial Period or Early Horizon traditions that were so prevalent to the north
  - no pottery, stonework, metalwork, etc. in coastal Initial Period or Chavín styles
  - a completely different, separate tradition in the altiplano
- in the drainages of the western slopes and on the coast flanking the altiplano, farmers lived in modest villages
  - plain pottery
  - no major ceremonial centers, although there may have been some modest public architecture at sites just now being studied
  - some social stratification indicated by variations in burials, but apparently not too dramatic; probably small to moderate-scale chiefdoms
  - little or no contact with the altiplano in some valleys, maybe some limited contacts in others
    - possibly through trading caravans of llamas
    - possibly visiting or resident shamans from the altiplano
  - some interesting burial customs, but we won't pursue them...
- Another spelling detail
  - Tiahuanaco is an older spelling, now used by some people to refer to the site of Tiahuanaco itself
  - Tiwanaku is a newer spelling, now more widely used; some people use it to refer to the pottery style, culture, and state centered at Tiahuanaco
- Our story picks up with the growth of the city of Tiwanaku
  - in what some people call the Late Formative period
  - also called Tiwanaku phases I through III
  - roughly ~200 cal BC - 500 cal AD
  - this chronology is still very fuzzy
  - as is the nature of the society that produced these ceramics
  - but already Tiwanaku and a few other sites that would be important later were becoming larger and specialized
    - most small sites had large quantities of stone hoes used for tilling fields,
    - but at Tiwanaku, Lukurmata, and Iwawe, hoes were rare or absent
    - suggesting that many people at these larger sites were not farmers, but rather probably craft specialists
- Things get a bit clearer with Tiwanaku IV, roughly 500-800 cal AD
  - the dating of Tiwanaku IV and V is still poor

- the two ceramic styles may not even really be sequential in time
- but we will use the currently available chronology here for lack of anything better
- the city of Tiwanaku grew to large size
  - most of the monumental architecture was first built in the urban core at the beginning of Tiwanaku IV
  - also high (and even apparently "royal") residences
  - there had been little or no residential occupation in the monumental core area until the last few decades of the Late Formative, suggesting that prior to Tiwanaku IV, Tiwanaku was fairly small, or maybe a mostly ceremonial, not residential, center
- Tiwanaku influence, maybe control expanded around the southern part of the lake
- possibly some colonization to the east and west of the altiplano, but this is not certain
- Tiwanaku IV is sometimes called "Classic Tiahuanaco", but don't read too much into the term "classic"
- Tiwanaku in Tiwanaku IV was apparently the capital of a state that dominated the southern altiplano
  
- Tiwanaku V (800-1000 cal AD) (again, approximate dating only)
  - more growth of the urban area
  - major remodeling of the monumental architecture and the high-status residences in the core of Tiwanaku
  - much more intense population and activity in peripheral regions
    - probably plantation-like colonies in some places
    - trade or religious relationships in others
    - probably some military conquest, too, especially in northern part of the lake shore
  - sometimes used to be called "Decadent Tiahuanaco", based on the slightly sloppier pottery style
    - but this was really the peak of Tiwanaku population and influence
- Tiwanaku in Tiwanaku V was the capital of a larger state
  - controlled a contiguous territory around the southern end of the lake
  - also pockets around the rest of the lake
    - as Stanish says, Tiwanaku was powerful enough to control any place they wanted, but not powerful enough to control every place they wanted
  - also a few much more distant pockets, at least some of them like agricultural colonies
  
- Tiwanaku collapsed rather abruptly around 1000 cal AD
  - we'll get to that in a future class
  
- The city of Tiwanaku
  - huge urban area of adobe house compounds
    - still only a few excavations have been done in the residential areas
    - at least 6.5 square kilometers
    - population estimates have varied widely, but the most recent are around 15,000 to 20,000 people at its peak in Tiwanaku V
  - with a large central district surrounded by an artificial rectangular moat

- enclosing a variety of monumental ceremonial architecture
- also large, rectangular walled compounds with high-status residences
- and an extremely high status residential area, the "Putuni"
  - interpreted as a royal palace with associated ceremonial buildings
- Akapana "pyramid" mound
  - around 200 m (about 650 feet) square
    - complex stepped shape in plan
  - almost 17 m (55 feet) high
  - stone-faced terraces with "H type" masonry
    - huge sandstone and andesite blocks, very well shaped
  - some tennoned heads have been found in the debris of the upper sides, but none in place
  - probably had a sunken court on top
    - although most of the evidence destroyed by massive looter's hole
  - and rooms around it with cut stone wall bases (probably the bases of adobe upper walls), stone thresholds, and some flat, cut stone paving
    - some food garbage (potatoes quinoa, maize), but no signs of cooking
    - lots of sherds of plain and decorated serving wares
    - residences of people who were supplied with prepared food?
    - places where people were served ritually charged meals?
  - internal drains and openings in the terraces
    - built of large cut stones, wildly over-engineered
    - drained the top of the Akapana, probably the sunken court
    - the drains run to cut-stone spouts in the terrace retaining walls, which would have gushed water onto the paved top surface of the terrace below
    - these have drains that in turn flow out from the next lower terrace face
    - so during a rain (or after, if the drains could be closed and opened by operators at the top), the Akapana mound would spout water from step to step
  - Stairways probably at various places
    - at the foot of one was found a "chachapuma" sculpture showing a feline holding a trophy head
    - and its pedestal that would have put it at eye level
    - probably one on either side of the bottom of the staircase
  - dedicatory (?) offerings
    - "kero smash" at foot of one of the terraces
    - numerous dismembered adult male corpses
    - not clear whether these represent one big offering event, or a series of events repeated over time
  - Use of the Akapana
    - water/rain/fertility/agriculture ceremonies?
    - ceremonies involving trophy heads, human and animal sacrifices?
    - ritual feasting, drinking from decorated keros?
- Kalasasaya platform
  - Sides supported by cut-stone wall with tall vertical stones in "H-type" arrangement

- wide stone stairway leading to some sort of cut stone gateway structure, now reconstructed
- with another sunken rectangular court on top
  - with a monolith in the center (the “Ponce” monolith)
- Semi-subterranean court
  - a sunken rectangular court with cut-stone walls
  - a wide stone stairway, similar to the one at the Kalasasaya, leads down into it
  - sides are decorated with tenoned heads in various styles
    - possibly taken from other sites around the lake area
  - several monoliths standing in the court
    - some in Tiwanaku style
      - like the “Bennett” monolith
    - some not; these are generally in Yaya Mama style, which was current several centuries before
    - one (the "Thunderbolt stela") is just the upper portion
      - lower portion was found at the site of Arapa on the north shore of Lake Titicaca
    - some of the monoliths were probably huacas taken hostage
      - as the Inka are known to have done
      - probably indicating that some of Tiwanaku's expansion was by force
- Putuni compound
  - another broad, low platform with a central sunken court, comparable to the Kalasasaya but lower
  - plus a complex of rooms to one side that are thought to be royal-status residences
    - adobe bricks on top of finely cut stone foundations
    - interiors (at least) were plastered to a smooth, flat surface, then painted red, yellow, orange, green, or blue
      - this was true of many other structures in the ceremonial core, too
      - some pieces of plaster had been painted and repainted up to five to fifteen times
        - ie. frequent maintenance kept the building looking pretty new
    - special red clay floors
    - doorways with cut stone jambs and elaborat carved stone lintels
    - courtyards paved with cut stone
    - three water wells
  - mostly kept very clean of food garbage
  - but one cooking area with a hearth and pits of food garbage
  - objects found on the floors suggest very high status occupants
    - stone and shell beads, copper pins and lip plugs, fragments of gold and silver, carved shell, a silver tube containing bright blue pigment
  - seems to have been used for high-status feasting, but private, not public
    - room layout is not publicly accessible, not a visible setting for an event
    - would not hold many people
    - fine serving wares were used, but not in the large quantities found in other contexts
    - but large quantities of liquids (presumably chicha) were stored in big vessels
    - also lots of animal bone

- Pumapunku platform
  - similar stepped plan and stone-faced terracing to Akapana
  - but much lower
  - apparently had monolithic walls and gateways on top
- Gateway of the Sun
  - name is historical, not prehistoric; the gateway probably had nothing to do with the sun
  - apparently moved around, original position unknown, but might have been on the Pumapunku
  - interpretation has generated a lot of words but little knowledge
  - Staff God (aka "front-face diety", "gateway god", etc.) on a stepped mountain or platform (?)
    - maybe a reference to the Akapana, as an artificial mountain
    - and thus to water sources, agriculture, fertility, etc. as the Akapana's drains seem to suggest?
  - flanked by running or kneeling figures in two varieties
    - some of the attendant figures have decorations around the eyes that have been linked to the cebil plant (*Anadenanthera colubrina*)
    - which, as we will see later, was used as a hallucinogenic snuff
    - and the linear designs with large dots shown on the other figures, including the main one, may continue the reference to the pods that hold the hallucinogenic seeds of this plant
  - the head and headdress, and very occasionally the whole body, of this figure is repeated in Tiwanaku ceramics, portable stonework (keros), gold, and wooden keros and snuff tablets
- stone construction involved gigantic stones (see pictures)
  - not found near Tiwanaku
  - apparently floated on boats or rafts to the "port" of Iwawe on the shore of the lake
  - then dragged to Tiwanaku
  - as indicated by partially-worked blocks scattered around Iwawe and on the route to Tiwanaku
- some stones held together with copper (actually bronze) "cramps"
- The resource base that supported Tiwanaku
  - A mixture of:
    - intensive raised-field farming (more on this below)
    - some rainfall farming on terraced hillsides
    - some "cochas" (sunken fields)
    - fishing on the lake
    - llama and alpaca herding in the higher grasslands
      - for wool, meat, and animals to carry cargo
  - exchange with lower elevations by llama caravans
    - for low-elevation crops like maize, coca, peppers
    - eventually formalized into colonies that produced low-elevation crops for the altiplano
- Raised fields

- in two major areas
  - the valley of Tiwanaku
  - the Katari valley, north of the Tiwanaku valley across a spine of hills
    - the main area of the floor of the Katari valley is called the pampa Koani
  - plus pockets elsewhere around the lake
- a vast area in total, estimated around 100,000 hectares!
- raised fields are
  - made by digging parallel ditches and piling the dirt in elevated bands between them that become the planting areas
  - these bands are constructed with coarse layers at the bottom, finer ones higher up, to allow for good drainage
  - water stands in the ditches, keeping the fields damp
    - either seeps in from the water table near the lake
    - or directed there from the river further inland
    - but the landscape is flat enough, and the water table high enough, that it does not flow or seep away
  - the water absorbs heat during the day and releases it at night, moderating temperatures and inhibiting frost
  - the ditches provide algae and fish for food, and also organic muck that can be dug out and spread on the fields as fertilizer
  - extremely productive, compared to rainfall or canal irrigated agriculture
- fields would have produced a limited range of high-altitude crops
  - tubers: potatoes, oca, ulluco, mashwa
  - grains: quinoa and cañiwa
- some were probably built by families or villages as early as the Late Formative
- but in the Katari valley, Kolata argues that they were built (or remodeled) as a coordinated, vast state project
  - although some people disagree, saying that many uncoordinated individual families could have produced this landscape
  - on a small scale during Tiwanaku IV, then on a grand scale in Tiwanaku V
  - they canalized and straightened the Rio Katari
  - laid out raised fields in large, semi-regular patterns
    - look too big and organized for family-level farms that grew organically
  - causeways for moving people and crops efficiently around the whole valley floor, running from larger sites out into the raised fields
    - again, these would not be family or village-level projects
  - dikes or levees for controlling water flow on a regional scale
- the raised field systems had a huge productive capacity for relatively few inhabitants in the immediate vicinity
  - villages were small and few
  - very little evidence of people living in the fields themselves
  - so the crops were destined for... Tiwanaku?
- By Tiwanaku V, there may have been an administrative hierarchy of sites in the Katari valley



- Lukurmata as the main administrative center
  - it had been a sizable village prior to Tiwanaku's influence in the Katari valley
  - Tiwanaku seems to have incorporated it into its agricultural scheme
  - building a platform mound and a sunken rectangular court bounded by finely cut stone blocks
  - some high-status residents
  - an area that seems to have been occupied ephemerally, maybe by temporary or seasonal work groups
- several secondary centers with platform mounds
  - with fancy pottery
  - plastered floors
  - some minor towns
  - and some small hamlets
- Did the same process happen in the Tiwanaku valley?
  - not clear; some argue that the Tiwanaku valley raised fields lack many of the features that suggest organization in the Katari valley
  - the Tiwanaku valley may have already been more filled up, claimed, and intensified by the time the state was powerful enough to carry out large-scale projects
  - and the people of the Tiwanaku valley were the core constituents of the state, so dispossessing them might have caused problems
- Expansion beyond the altiplano
  - there is a large area around the altiplano in which Tiwanaku objects occasionally are found
    - but it is becoming clear that most of this area was not directly associated with Tiwanaku
    - maybe occasional trading ventures, hand-to-hand exchange of exotic goods from Tiwanaku, etc.
  - but there were a few distant enclaves where Tiwanaku had a dramatic impact
    - just as Stanish suggested that Tiwanaku could only control certain areas around the lake outside of its core territory, it apparently picked just a few remote places to concentrate on
    - these seem to have been of various different types
- Moquegua and Cochabamba
  - direct agricultural colonization
    - Cochabamba is on the upper edge of the Amazonian forests
      - agriculturally rich, well known for its coca production
    - Moquegua is a middle-elevation valley on the Pacific slope of the Andes
      - warm, dry, mountainous desert
      - but very productive when irrigated with river water
  - both would have produced maize, coca, peppers, fruits, etc. that don't grow well or at all in the altiplano
  - colonists from the altiplano apparently coexisted peacefully with local populations
    - who were settled farmers living in sometimes sizable villages
    - apparently had some chiefly leaders, but not significant concentration of wealth or corporate labor projects
- Taking Moquegua as an example

- Cochabamba looks similar, but research is just picking up there
- and there is a lot of disagreement about the nature of Tiwanaku's influence there
- in Tiwanaku IV (maybe 600-800 cal AD)
  - probably an early, small influx of Tiwanaku colonists
  - maybe a temporary response to drought conditions in the altiplano prior to 750 cal AD?
- in Tiwanaku V, big plantations producing crops for export to the altiplano (800-1000 cal AD)
  - three large, one smaller concentration of settlement along the valley
    - only on one side
    - in clusters near springs, side drainages, or flat areas that could be reclaimed from the desert using canals
    - while local people apparently kept on living in many villages spread all around the valley
    - that is, the locals probably had already claimed the valley bottom
    - and the Tiwanaku colonists did not attempt to displace them
      - but instead built canals to irrigate unused desert land
- largest of the colonial clusters is Chen Chen
  - a town
  - surrounded by a ring of cemeteries
  - the burials contain Chen Chen style Tiwanaku ceramics
    - these are very similar to ceramics from around Tiwanaku
    - some may be imports, but most probably made locally according to Tiwanaku style
  - the cemeteries contained around 13,000 burials
    - that is, a lot of people moved from the altiplano to Moquegua
    - and had kids there
  - adjacent to a complex of fields reclaimed from the desert
    - irrigated by a long canal
    - the orderly layout suggests an organized project, not individual plots
  - next to the village is an area of cylindrical stone-lined pits with prepared clay floors, evidently for storage
    - similar pits are not unusual in residential sites
    - but usually one or two per household, not a whole area packed with them
    - suggests storage of a lot of food, like maize
    - on a community, rather than family, basis
    - probably for shipment to the altiplano
- another is the site of M10 at Omo
  - Omo is a modern place name that includes several prehistoric sites
  - M10 was a village with its own cemeteries
    - also with Chen Chen style Tiwanaku ceramics
  - plus a temple in roughly Tiwanaku style
    - hillside tiered into three levels
    - all bounded by adobe walls
    - the highest terrace retaining wall was faced with well-cut rectangular stone blocks

- with a stairway up the middle, to a triple-jambled doorway with a swinging door (very unusual)
- sunken rectangular court in the uppermost platform, lined with cut stone blocks
- big hole in the center may have held a monolith
  - a rough blocky head was found near the temple, maybe from that monolith
- red clay floors
- painted walls
- also at Omo is another, separate village on a nearby ridge, site M12
  - this was a village of rectangular cane-walled houses organized around three small plazas
  - the pottery was different from that at Chen Chen and M10
  - it is called Omo style
- we now know that the Chen Chen style and Omo style ceramics were contemporary
  - but used at separate settlement sites
- the two kinds of sites were always located next to each other
  - every cluster of Tiwanaku sites has at least one Chen Chen style site, and at least one Omo style site
  - yet they did not mix
  - no burial is known to contain both kinds of ceramics
- looks like two distinct ethnic, political, kin, etc. groups
  - yet working together on the same (or adjacent parts?) of the same agricultural system
- further evidence of this is that there was a second temple
  - where ceramics of the Omo style were buried
  - looks like a feast involving drinking from matched sets of blackware keros
  - and eating camelid meat
  - after which the keros were smashed, possibly in a fire
  - and all the debris was buried in several pits in the uppermost room of the temple structure
- that is, each ethnic (or whatever) group had its own villages, and each had its own temple
- the Moquegua colony was apparently populated by people who were directly transplanted from the altiplano
  - their artifacts were virtually identical to altiplano ones
  - biological evidence suggests very close relationship
    - specifically with people from the Katari valley, around Lukurmata
    - Kolata suggests that people who were experienced in setting up and running the Katari valley raised field "plantation" (or their descendents) were sent to do a similar task in Moquegua
  - but some intriguing differences in the temple architecture...
- San Pedro de Atacama
  - very distant to the south, across barren desert
    - month and a half caravan trip, according to Moseley
  - a small, isolated settlement at a mountain desert oasis

- no sign of an agricultural colony, like the one in Moquegua
  - instead, burials of a few local people who had lots of portable, highly decorated Tiwanaku goods
    - gold keros
    - highly decorated textiles, especially tapestry tunics
    - hallucinogenic snuff sets
      - typical decorated bag
      - with a usually elaborated carved snuff tablet with Tiwanaku iconography
      - a sniffing tube, usually with one end worked into the open mouth of a feline, and the other a rounded conical fitting
      - often a brush, spatula, little spoon...
      - one or two smaller bags containing the snuff powder
        - shown by chemical testing to contain a psychoactive chemical found only in cebil (*Anadenanthera colubrina*)
        - not all people had this stuff, but many did
    - these items happen to have been preserved in the dry desert environment, and give us a glimpse of what textiles, wood, etc. items were probably like at Tiwanaku, where they are generally not preserved due to the wet climate
  - all of these objects were charged with Tiwanaku iconography
    - which may have made them particularly prized in a remote place like San Pedro de Atacama
    - they seem to be high-value, easily transported items, the sort of thing that Tiwanaku traders might pack as trade goods to maximize the value of the goods that they could get in exchange
  - Tiwanaku traders might have come all the way to San Pedro to get copper, which was mined there prehistorically
    - as we know from the body of a miner with his tools who was killed and preserved in a cave-in
    - similar stone hammers are found in some San Pedro de Atacama burials contemporary with the ones with Tiwanaku goods
  - the people who had the Tiwanaku finery were a very small number of individuals, maybe a family line that served as the contacts for the Tiwanaku traders
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- Meanwhile, at the same time as the Tiwanaku state developed and expanded, a related but quite different expansionist state arose in the Andes to the north: Wari
  - we'll look at this northern aspect of the Middle Horizon next time...