TIWANAKU: THE CITY AT THE CENTER

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The mystique of the city of Tiwanaku in late Prehispanic Andean society was intimately associated with its role as a place of origin in cosmogonic myths. According to the various 16th century accounts of Betanzos, Sarmiento and Molina, it was in Tiwanaku that the creator god Viracocha ordained a new social order, and it was from Tiwanaku that the primeval couple were sent out along symmetrically opposed migratory paths to call forth the nations of the Andean world from springs and rivers, rocks and trees.

The city of Tiwanaku was founded on the Andean altiplano, or high plateau, near the southern shores of Lake Titicaca, an enormous inland sea ringed by glaciated mountain peaks. In the ancient Andean world, Lake Titicaca was the sacred locus for many indigenous myths of creation. Early Spanish chronicles relate that native Aymara Indians referred to the fertile axis formed by the lake as *taypi*, the essential conceptual and physical zone of convergence between the principles of *urco* (symbolically associated with the qualities of west, high, dry, pastoralism, celestial, male) and *uma* (symbolically associated with the qualities of east, low, wet, agriculture, underworld, female). Importantly, these essential qualities or principles of reality were tangible and observable features of the physical environment. This was no vaguely ambiguous concept; rather it was a lived and constantly re-experienced reality embedded in the most concrete and salient characteristics of landscape and the evocative symbolic associations inhering in that landscape.

The altiplano dweller can gaze westward from atop the Chila mountain range in the valley of Tiwanaku toward the immense, high, arid plains of the urcosuyo countryside. Crossing the lake from Tiwanaku toward the east, one can climb the side of Mount Illampu and look down from a high mountain pass toward the yungas, the humid, cloud shrouded valleys that cling to the eastern slopes of the Andean chain: the lands of the umasuyo. From either mountain vantage point, the glistening, cobalt blue surface of the lake marks the axis of ecological transition from one zone to another. The continuity and orderliness of the cosmos demanded that these complementary,

opposing principles of uma and urco, which were themselves an interpenetrating skein of natural and cultural qualities, be brought into creative conjunction: that the structural faultline between them be seamed in some fashion. This was the conceptual and symbolic role of *taypi* , and Tiwanaku was the central representation of the *taypi*; the principal icon emblematic of the physical zone of necessary convergence. According to the chronicler Bernabe Cobo (1653), the true name of Tiwanaku was *Taypikhala*, which in Aymara meant the stone in the center. Such a name had a geocentric and ethnocentric meaning signifying that the city was conceived not only as the political capital of the state, but also as the central point of the universe.

Tiwanaku at apogee was not simply an altiplano village writ large. The city's conceptual and social roots resided in the fundamental organizational forms of ayllu (lineages) and moiety relationships that undergirded native Andean civilization. But as it gained religious prestige as the paradigmatic ceremonial center of the high plateau, Tiwanaku was transformed qualitatively: it became, in Mumford's (1961: 36) words, "a new symbolic world, representing not only a people, but a whole cosmos and its gods." The structuring of the city by principles embedded in a perceived cosmovision extended to its physical, built form, but, more importantly, to the actors who created that form as well: that is, the concept of cosmological order pervaded the social and political organization of Tiwanaku society.

Tiwanaku, most especially its civic-ceremonial core, was a regal city, redolent with the symbolism of power, both sacred and secular. The city was the principal seat of Tiwanaku's ruling lineages, the locus of the royal court, and the holiest shrine of the imperial religion. The city itself was simultaneously an icon of Tiwanaku rule and a cosmogram that displayed symbolically in the spatial arrangement of its public architecture and sculpture the structure that framed the natural and social orders. It was conceived as the *axis mundi*, the city at the center that bound together the complementary universe of the sacred and the secular. It was, in short, the ultimate nexus of wealth and power, social identity and prestige, cult and command.

The architectural form of Tiwanaku, together with its public ensemble of monumental stone sculptures [cross-reference here to exhibition sculptures] intensified the mythic aura of

the city, embuing it with a quality of the supernatural: a sacred space beyond the strictures of the profane world in which it was embedded. The ceremonial core of Tiwanaku was surrounded by an immense artificial moat that restricted easy access to its centrally located public buildings. The intent behind this reshaping of the high status urban landscape through construction of a physical barrier of water was not to provide the Tiwanaku elite with a defensive structure against marauding barbarians or the potentially hostile lower classes of the city as Posnansky (1945: Vol I-II: 120-121) believed. Rather, the concept was precisely to evoke the image of the city core as an island. But not just a common, generic island. The notion was to create, at the cost of a huge investment in human labor, an image of the sacred islands of Lake Titicaca which were the *situs* of cosmogonic myth: the points of world creation and human emergence. The moat generated a dramatic visual cue that emphasized the ritually charged nature of social actions that were played out in the center. In essence, in moving from the landlocked outer ring of Tiwanaku's vernacular architecture across the moat into its interior island circle of temples and elite residences, the visitor to the city moved from the space and time of ordinary life to the space and time of the sacred. The interior sacred core was symbolically a human recreation, or perhaps more aptly, re-representation of the place and time of human origins.

In the Andean world, as in many other indigenous cosmologies, the time of origins was not a vague, temporally distant historical event to be remembered and commemorated in yearly ceremony. Rather, cosmological time was cyclical, regenerative, and recreated by human agency: the time of origins was then, now, and anticipated to recur in the future. Humans existed in the sacred time of cosmology, as well as in the profane time of daily life. The ceremonial inner core of Tiwanaku, in some sense, was constructed as the theatrical backdrop for the recurrent social construction of cosmological order. And, of course, the parallel message embedded in this architectonic text was the appropriation of the sacred by a subconstituency of society: the Tiwanaku élite.

Within the ceremonial core of Tiwanaku were constructed not only the principal temples of the city, but also the palatial residences of the ruling class. By living within this sacred inner

precinct of the city, these élites were claiming for themselves the right (and assuming the obligation) to intercede on behalf of society with the divine,. with the supernatural, to maintain harmony in the natural and social orders. The lineages of the élites, in essence, conjoined historical time (the linear experience of time lived here and now) with cosmogonic time (the cyclical, regenerative time of myth). As Robert Ellwood (1973:3) suggests, the figure of the king, and the symbolic process of kingly accession played the pivotal role in merging the powers of myth and history on behalf of society in the archaic world:

[kingly accession] "brought the cyclical eternal-return time of nature and its seasons together with time as history, the time of society which could only approximate repeating itself in the line of kings. Fundamentally, then, the rite of accession is an act of civilization. However primitive the society, it catches up the temporal paradox which underwrites civilization. The rites seek to impose upon human society a continuity with nature."

Although, lacking primary, indigenous texts, we have no access to the names of Tiwanaku's kings, their lineages, or their individual deeds, the peculiar architectonic and sculptural arrangements within the inner regal core of their capital city permits us to reconstruct a plausible theory of meaning regarding the built environment of which they were the principal authors and patrons. This, in turn, gives us insight into the nature of rulership in Tiwanaku society. In what follows we will explore in as much detail as is currently available to us the character and meaning of Tiwanaku as an urban center: how it was structured internally in terms of global architectural planning; the kinds of cultural meaning that we can impute to individual structures; what social activities were undertaken in the various wards of the city; what was the relationship between Tiwanaku and its near hinterland.

Sacred Geography and Urban Design

To the tourist, Tiwanaku appears as a city without an obvious internal plan. A few monumental structures built of stone loom isolated above the surface, dramatic landmarks in an otherwise seemingly featureless plain shrouded in *ichu*, the tough bunch grass of the high plateau. The eye is drawn ineluctably to these salient monuments, and the tourist's invariant paths toward

them cut across and ignore the ancient logic of circulation now interred beneath the surface. Yet walking from one such structure to another, the more observant visitor realizes that the ground undulates underfoot, dropping from time to time into large hollows, or suddenly stepping up onto low platforms. Ancient public plazas and private courtyards persist in vague tracery, deteriorating, but still detectable. Weathered stone pillars project from the earth marking the corners of ruined buildings now deeply buried under fine-grained sediment. The sedimentary products of erosion from ancient adobe structures and from the surrounding mountainous landscape deposited over the centuries obscures much of what was once the internal urban order of Tiwanaku. But there still remain lines of sight along walls and between structures perceivable to the eye accustomed to look for such alignments. Enormous segments of polished sandstone, granite and andesite drains, sophisticated technological artifacts from Tiwanaku's system of fresh water supply, lie scattered about with no immediately understandable relationship to each other. Ironically, only the intact, deeply buried network of subterranean sewer lines offers clues to the original plan of the city's hydraulic infrastructure.

Despite these physical impediments to deciphering the morphology of the ancient city, the underlying concepts of social order that brought form to Tiwanaku are gradually emerging from the cumulative evidence of systematic archaeological research that began in 1957 under the aegis of Bolivia's Centro de Investigacionces Arqueologicas en Tiwanaku (CIAT), subsequently incorporated into the Instituto Nacional de Arqueologia de Bolivia which was founded and directed for many years by Carlos Ponce Sangines. We can now extract some of the general organizing principles that structured the capital, and trace those which carried over to the internal design of Tiwanaku's satellite cities: a comparison that generates insights into the construction of political, economic and social hierarchies, and provides an entreé into the meaning of symbolic representation expressed through the medium of architectonic display on an urban scale in Tiwanaku society.

The Concentric Cline of the Sacred

Earlier in this chapter, we alluded to the key element of one such organizing principle embedded in and shaping Tiwanaku's urban order: the civic-ceremonial core of the city evoked the image of a sacred island, the island of universal origins and human emergence. Tiwanaku's moat served to physically demarcate the concentrated, sacred essence of the city. The moat acted as a psychological and physical barrier, setting up by its very shape, dimensions, and symbolic representation, a concentric hierarchy of space and time (recall that passage across the moat represented a change of both spatial and temporal frames of reference, a movement into the place and time of ethnic origins). The contradiction inherent in its meaning to the people of Tiwanaku must have been clear to them: the central island of cosmogonic myth was believed to be the point of origins for *all* humans, but at Tiwanaku, only *some* humans, the élites of Tiwanaku society, appropriated the special right of residence in this sacred core. The barrier of water, then, also marked a point of transition that distinguished the residences of élites from those of commoners: social inequality and hierarchy was encoded in Tiwanaku's urban form.

There was, in other words, a principle of urban order at Tiwanaku that we might describe as a concentric cline of the sacred that diminished in intensity from the city core to its far peripheries. Within this framework of urban order keyed to conceptions of the sacred, the inhabitants of Tiwanaku occupied physical space in accordance with their relative social and ritual status. At the highest level, ritual status was identified and partially merged with political authority: not surprisingly, the upper echelons of the Tiwanaku élite monopolized for their residences the innermost (and most sacred) core of their artificial island enceinte. The notion that there was some image of concentricity in the mind of the people of Tiwanaku which shaped conceptions of "proper order" within their capital is reinforced by the presence of two additional, although partial moats situated farther to the east of the primary moat completely encircling Tiwanaku's monumental architecture. The precise meaning of these moats is not clear. They do not have obvious technological functions, although it is possible that they served to drain excess groundwater and seasonal rainfall away from inhabited portions of the urban landscape. But,

given the correctness of our interpretation of the meaning of Tiwanaku's principal moat, we would suggest that the essential purpose of the moats toward the city periphery was to symbolically mark social boundaries, to further differentiate the ritual status of the urban residents by their relative positions along what we have referred to as the concentric cline of the sacred. Movement from the east of Tiwanaku towards the civic-ceremonical core of the city, then, entailed passage across a nested, hierarchical series of socially and ritually distinguished spaces.

In creating this sort of symbolic text from architectonic space in a non-literate society, we perhaps run the risk of forcing the interpretive enterprise beyond the limits of credulity. But the problem of believability here turns on the fact that we are unaccustomed to perceive our own Western urban environments as embued with this kind of symbolic coherence: our image of the city is one of almost chaotic fragmentation, many disparate parts that make, at best, a mechanical, ill-fitting whole. Movement through the Western city from periphery to core does not offer the same sense of the inexorability of revealed truth that was frequently designed into the archaic city. The social élites of London and New York never validated their status by emulating and symbolically appropriating the cyclical, reproductive powers of nature: there is an almost insuperable cognitive gap between the archaic, agrarian mind and the mind of the industrial world - they inhabit and are engaged by separate realities.

Then too we must recall that cities and urban design played a distinct role in the agrarian world of archaic states. These were fundamentally non-urban, or even anti-urban societies. The bulk of the population in archaic states resided in the countryside, dispersed in small villages and hamlets. The dominant social reality of these archaic states was one which turned on the cyclical, seasonal rhythms of rural life, radically removed from the cosmopolitan world of the élites. The cities that did exist in these societies were few and consequently exceptionally special. Most were important centers of pilgrimage for the inhabitants of the countryside: a necessary nexus of religious tourism and venal commercialism. At the same time they were the distilled essence of élite belief, the focal points of publically expressed concepts of universal order. To exert any moral authority over the rural hinterlands, they needed a coherent, immediately understandable

design that directly, perhaps even with exaggerated, chiaroscuro-like effect, expressed a sense of man's (and still more specifically one's own ethnic group's) place in the world. Ironically this sense of place, expressed with monumentality in the architecture of the cities, explicitly evoked a rural sensibility. The life of farms and fields in the countryside provided the model for the essential relationship between humankind and nature that profoundly influenced the internal design and social order of the city. The symbolic text written into the design of these cities was one which attempted to identify, or to harmonize the productive (yet potentially destructive) forces of nature with the culturally created order of human society. The rural hinterlands of cities in the archaic world tangibly produced both food and symbolic meaning for urban populations. Such intense symbolic and historical relationships between urban and rural realities seem alien or quaint to us now, disintegrated under the heavy burden of industrialization and the globalization of economies. But we must vividly recreate in the mind these relationships if we are to grasp the social principles that brought form and meaning to archaic cities such as Tiwanaku.

The Solar Path: From Mountains to the Lake

A second principle of urban organization at Tiwanaku crosscuts what we have termed the concentric cline of the sacred. This is a principle of organization that derives from cardinality, and more fundamentally from the perceived path of the sun across the urban landscape. The major structures within the civic-ceremonial core of Tiwanaku are aligned generally to the cardinal directions. The division of the city by a solar axis was not so much a physical, planetary concept, as it was a rich, cultural concept laden with symbolism. The intersection of the solar path with the central point of the city was perceived as the place of union between the earth and the celestial and subterranean worlds. This place of conjunction was physically represented by the image of the sacred mountain that rises from earth to sky, and specifically at Tiwanaku as we shall see below, this image was powerfully evoked by the stepped pyramid of the Akapana.

The perceived solar path established an east-west axis that bisected the city, and furnished the principal axis of orientation. This solar path emerges from and dissolves back into two salient geographic features to which indigenous peoples in the Valley of Tiwanaku still orient themselves:

the glacier shrouded peaks of the Cordillera Real, particularly the three peaks of Mount Illimani, to the east (the emergent sun) and Lake Titicaca to the west (the waning, setting sun). The mountains and the lake are readily visible from the flanks of the mountains that enclose the valley, but both can be glimpsed simultaneously from the city of Tiwanaku on the valley floor only from the summit of the Akapana, Tiwanaku's tallest terraced platform mound. The summit structures and central sunken court of the Akapana (and the élites who resided there) must have been embued with considerable symbolic power derived, in part, from this unique visual frame of reference. From this summit alone could one track the entire celestial path of the sun from its twin anchors in the mountains and the lake.

That the élites of Tiwanaku were conscious of, and purposely manipulated this solar element of sacred geography to invest their capital with social and spatio-temporal symbolic meaning seems certain from key aspects of the architectural design of the Akapana, and its companion terraced mound to the southwest, the Puma Punku . As Cieza de Leon recounted in clear reference to the Akapana and Puma Punku, these two "sepulchral towers of the native lords of Tiwanaku" have their "doorways [facing] the rising sun." Although not mentioned by Cieza, each of these structures possessed a second staircase, directly opposite those referred to in his account. That is, as we now know from recent excavations at these two structures, both Akapana and the Puma Punku possess axial, twin staircases constructed centrally into their east and west facades. The concept of east-west axial entry ways were also design features of the Kalasasaya, Chunchukala, and Putuni complexes in Tiwanaku's civic ceremonial core. What is interesting about these sets of axial staircases, apart from their simple presence and location, is that they differ dramatically in terms of architectural elaboration. In these structures, both sets of western staircases are significantly smaller in scale than their eastern counterparts. Furthermore, in the case of the Pumapunku, Chunchukala and Putuni complexes, the western staircases lack the elaborate, monumental carved stone jambs and lintels that grace the eastern entries. It is likely, although not yet demonstrated archaeologically, that this architectural pattern applies to the Akapana as well. This differential architectural treatment, which signified substantially different investment of labor

and "structural capital," implies that these buildings, and more specifically their points of entry and egress, architectually encode a culturally significant symbolic, or status hierarchy. That is, we suggest that in Tiwanaku's system of sacred geography reflected in principles of urban design, east was symbolically of higher status then west, and that this symbolic hierarchy derives, ultimately, from the symbolism of the solar path: the ascending sun of the east is energetically more powerful than the waning sun of the west.

As with the concentric principle of urban organization described above, the principle of axiality generated by the solar path differentiated social space in Tiwanaku. In effect, the solar path conceptually divided the city into two hierarchically ranked segments with distinct symbolic associations: east (upper/celestial/higher prestige) and west (lower/chthonic/lesser prestige).

The Twin Ceremonial Centers

Cross-cutting the east-west axis generated by the solar path, there was apparently a further bipartition of social and symbolic space at Tiwanaku into northern and southern segments, to form, with the solar axial partition, a division of Tiwanaku into four quadrants. At the most general level, we can assume that these quadrants replicated symbolically the four quarters of the known Tiwanaku world. Such a symbolic division is common to archaic cities, particularly archaic cities of empire throughout the world (see, for instance, Wheatley 1973). We know that the Inca capital of Cuzco was organized symbolically in just such a fashion (Zuidema 1990) having been partitioned into two hierarchically ranked sectors, *hanan* Cuzco and *hurin* Cuzco, and further sub-divided into quadrants defined by the four principal roads leading out to the provinces. The Cuzco quadripartition rendered the capital an audacious microcosm of the empire, as well as an architectural metaphor for, or perhaps more concisely stated, a cosmogram of the Inca universe (Zuidema 1990).

Tiwanaku's north-south division may be inferred from the distribution of its two principal terrace-mounds: Akapana (north) and Puma Punku (south) . These two temple-mounds constitute the most visually salient features of Tiwanaku's urban design. Moreover, they do not stand isolated as individual monuments. Rather each terraced mound forms the central piece of an

orchestrated tableux of sacred architecture and monumental sculpture. The complex flanking the northeast side of the Akapana is the most clear and complete example of this concentration of ceremonial architecture . The individual elements of this architectural tableux (Kantatayita, Semi-subterranean Temple, Kalasasaya, Chunchukala and Laka Kollu) were, most likely, constructed at different times, but they were always oriented to, or compsed around the imposing physical presence of the Akapana platform. These flanking structures, along with the Akapana itself, were the dramatic theatrical backdrops, or staging areas for some of Tiwanaku's most iconographically rich and visually arresting sculptures [**cue here to specific exhibition sculptures**].

Similarly, although less massive than the Akapana complex, the Puma Punku platform was the visual, and, one can infer, symbolic lynchpin of a second, southern ceremonial complex within the city of Tiwanaku. The Puma Punku , although utterly shattered and in virtually complete ruination, is one of the most beautiful and architecturally complex structures ever created in the ancient Andean world. Its principal, eastern entry court was graced by massive, but delicately carved door jambs and lintels, and by a series of monumental figural sculptures. In fact, this court was probably the original location of the justifiably famous monolithic sculpture referred to as the"Gateway of the Sun".

If we accept that Tiwanaku was spatially and symbolically partitioned into northern and southern segments, each with its own core of ceremonial architecture and sacred sculpture, what might this architectonic pattern mean?, and how was this design linked into broader social and political structures? If we take as a potential model the meaning embedded in the dual division of Cuzco into *hanan* and *hurin* segments, this bipartition reflects basic patterns of social, economic, political and religious organization. That is, in Cuzco, each of these two divisions were associated with specific lineages, or *ayllus* that were ranked in a hierarchy according to the degree of their kin relationship with the king and his royal lineage. As Zuidema (1990) notes, these *ayllus* possessed territorial rights and access to sources of water within the district of Cuzco and were obligated to perform certain ritual obligations, such as "funding" the celebration of agricultural rituals, or maintaining a particular *huaca*, according to a complex ceremonial calendar.

John Murra's (1968, 1972, 1985) extensive ethnohistorical research established with little ambiguity that a similar principle of dual division of the political landscape operated among the Lupaqa, the Aymara speaking kingdom of the 15th and 16th century centered in Tiwanaku's old core territory in the Lake Titicaca basin. Two principal Aymara lords, Qari and Qusi, were the pre-eminent political leaders of the Lupaqa during the mid-16th century. As might be anticipated under a thoroughgoing system of dual division, Qari and Qusi's "kingdom" as a whole, as well as each province, was divided into upper and lower moieties, and two lower ranking lords ruled at each of these territorial levels.

A colonial document from 1547 describes the political situation in the village of Tiwanaku in structural terms similar to that of the contemporary Lupaqa kingdom (Ponce 1971:25). At that time the village and its near hinterland (consisting of the lands of smaller villages and *estancias* that still exist today) was led by a principal lord named Tikuna, assisted by a second *curaca* named Jichuta,who was of somewhat lower prestige and rank ("la segunda persona"). As Ponce (1971) remarks, this is a clear allusion to a moiety system with political and social bipartition. In his dictionary published in 1612 the Italian Jesuit Ludovico Bertonio, who lived in Juli, one of the seven *cabeceras* of the Lupaqa, remarks that the Aymara names of the complementary moieties were "Alasaa" and "Maassa," and that "all of the pueblos [villages] of the altiplano" possessed this division. This system of dual division persisted in a remarkably integrated and systematic fashion in the village of Tiwanaku into the 19th century as recorded in fascinating detail by Adolph Bandelier (1911: 235) who in 1894 questioned the locals regarding their form of political and social organization:

"The reply came that there were only two [divisions], Arasaya and Masaya. These two groups are geographically divided at the village. Masaya occupies the building south, Arasaya those north, of the central square, the dividing line going, ideally, through the center of the plaza from east to west. This geographical division is (at Tiahuanaco) even indicated at church. We saw, when at mass, the principals of the two clusters, each with his staff of office, enter in procession: Masaya walking on the right or south, Arasaya on the left, or north, and take their places in the same order on each side of the altar. After the ceremony they jointly escorted the priest to his home. But we were told also, that there were other ayllus (and as many as ten) within the parish. This caused me to inquire for the church books...and I soon found out what I already had suspected, that the two main clusters just named were not kins or clans, but groups of such, perhaps phratries. This is a very ancient arrangement and existed, among other places, at aboriginal Cuzco, where the river divided the inhabitants into two clusters, Hurin-suyu and Hanan-suyu, whereas there is every probability that the tribe was composed of at least thirteen clans, of ayllus, localized; a certain number of them belonging, through their location, to one and the remainder to the other principal subdivision."

Bandelier goes on to recount that the church records of local marriages in Tiwanaku reaching back to 1694 refer to the same Masaya and Arasaya territorial dichotomy. The importance of the Masaya and Arasaya to both political authority and ritual acitivity is underscored in Bandelier's perceptive commentary.

But the question remains: given their remoteness from each other in time, and to a lesser extent, geography, are we on secure ground applying principles and practices of spatial and social partitioning from Cuzco and the early colonial period Aymara to Tiwanaku? Are these principles historically contingent, or are they the product of fundamental, perduring structures of great antiquity and broad geographical distribution in the Andean region? It would seem that the preponderance of the ethnographic and ethnohistorical evidence confirms the latter proposition, although, as in any circumstance in which we lack primary textual evidence, we can never claim ultimate certainty. But, along with Ponce (1971) and other Andeanists who have considered the

problem, we would argue that a Lupaqa-like social, political, and religious structure of dual division did govern Tiwanaku society and resulted in the urban design of twin ceremonial centers that we can perceive in the capital.

Concepts of sacred geography and the symbolic integration of natural landscapes were clearly strong forces shaping the urban design of Tiwanaku. In a global sense, then, we can conceptualize the plan of Tiwanaku as a circle (the concentric cline of the sacred) within a square (quadripartion). The innermost island enceinte demarcated by Tiwanaku's principal moat was the heart of elite residence in the city, and the setting for one of the most important shrines: Akapana. The island enceinte represented the concentrated essence of the sacred, structured as an orchestrated, architectural allusion to cosmogonic myths. At the same time, this sacred core functioned as the ceremonial center for Tiwanaku's northern moiety, linking the concentric principle of design with the principle of dual division and cardinality. Puma Punku to the southwest, then, formed the complementary ceremonial center for the southern moiety. If we have some insight into the overall structure, social partitioning, and symbolic structure of Tiwanaku's urban design, what can we say about the meaning, function and social characteristics of individual elements in its monumental and vernacular architecture?

Tiwanaku's Civic-Ceremonial Core

If there is a single emblem of Tiwanaku élite architectural design, the terraced platform mound constructed around an interior sunken court is its essence. This form dominates the civic-ceremonial core of Tiwanaku and that of its satellite cities such as Lukurmata, Pajchiri, Khonko Wankane and Oje. At Tiwanaku this form finds expression in multiple architectural complexes. The two principal terraced platform mounds at Tiwanaku, Akapana and Pumapunku, although different in scale and architectural detailing, share this concept, as do, on a less grand scale, the major building complexes of the Kalasasaya, Putuni, Chunchukala and Kheri Kala. Each of these architectural complexes share, as well, elaborate carved stone monuments [**Chunchukala exhibition sculpture**] and from excavations undertaken to date, an apparent non-residential character. That is, for the people of Tiwanaku, the terraced mound with interior sunken court was

the standard architectural framework for ceremonial display and public religious expression.

Akapana: The Sacred Mountain

The largest and most imposing single building in Tiwanaku is the Akapana. Perhaps because of its massive and unprecedented scale for the Andean highlands, archaeologists early in this century assumed that the Akapana was a natural hill, a geological feature only superficially modified by the people of Tiwanaku (Bennett 1934; Posnansky 1945). But, as recent excavations have demonstrated unequivocally, the Spanish chronicler Cieza de Leon had it right nearly 500 years ago when he described the structure as "a man-made hill, built on stone foundations" (1959:283). The Akapana is, in fact, an entirely artificial construction of transported earth, clay, gravel and cut stone stepping up in seven, superimposed terraces. The design, techniques and materials of construction in the Akapana are fascinating in themselves, but even more so for the insight they provide concerning the function and meaning of this impressive structure.

The Akapana conforms to a rather eccentric plan that has been described as one half of an Andean cross. The Andean cross is one of the most ubiquitous, if least understood elements in Tiwanaku iconography, and may be a symbol for the four quarters of the inhabited human world [see **stone portal exhibition sculpture with Andean cross design**]. The structure itself is approximately 200 meters on a side at its maximum extent, and rises to nearly 17 meters in height . The basal terrace is a monumental and strikingly beautiful revetment of cut stone with rounded, beveled edges at the joins between blocks. This massive stone foundation replicates a construction technique employed at the adjacent Kalasasaya complex. In this technique, vertical pillars were erected at the corners of the structure, as well as every few meters along the facade of the terrace. In the case of Akapana, these vertical pillars occur at intervals of approximately three and one half meters. Between the pillars, the architects of Akapana set cut stone blocks in ashlar-like masonry, precision joined without mortar. This gigantic revetment wall was then capped with large, rectangular blocks that projected slightly beyond its vertical face, much like modern coping tiles.

The upper six terraces of the Akapana riding on this foundation differ substantially in architectural detail. These upper terraces, for instance, lack the distinctive rounded, beveled edges of the stones employed in the basal terrace, and make less frequent use of vertical pillars to mark facade intervals. Instead, these terraces incorporate large, highly visible stone panels into their facades. Based on similar architectural elements in the Kheri Kala, Kalasasaya and Kantatayita complexes, we can assume that these panels were covered with iconographically rich metal plaques and textiles, or may themselves have been carved and painted. The upper terraces, in short, constituted a kind of public, symbolic text, the specific content of which is now irrevocably lost to us. Given the ritual meaning that we ascribe to the Akapana, the "public texts" of the upper terrace panels most likely made reference to the role of this structure in Tiwanaku's cosmogonic myths. Excavations along these upper terraces also recovered tenon-head sculptures of pumas and humans that were at one time inserted into the facades, punctuating the flat, vertical surfaces of the terrace walls with gargoyle-like projections.

Apart from the obvious, general fact that the Akapana is the most imposing structure at Tiwanaku and the touchstone for the entire northern ceremonial complex, we suggest that Akapana was conceived by the people of Tiwanaku specifically as their principal emblem of the sacred mountain. That is, Akapana served as a human-created simulacrum of the highly visible, natural mountain huacas in the Quimsachata range. We infer this symbolic association for several, interrelated reasons. Most simply, the Akapana mimics the form of a mountain, ascending in seven stepped-terraces to visually dominate the urban landscape. Throughout the archaic world, there are countless instances of this kind of symbolic mimesis between pyramidal structures and mountain peaks (Townsend 1979; Wheatley 1973). But, more subtly, certain structural features of the Akapana intensify the mountain association, and, even more specifically, the link between mountains and sources of water.

Our recent excavations at Akapana revealed an unexpected, sophisticated, and monumental system of interlinked surface and subterranean drains. The system begins on the summit with sets of small, subterranean stone-lined channels that originally drained Akapana'a central sunken court

(this court is now entirely destroyed by massive 17th century looting operations). The sunken court on Akapana's summit was not roofed, and huge amounts of water collected in the court during the altiplano's furious rainy season between December and March. These stone channels conducted water from the sunken court to a major trunk line that was buried deeper beneath the summit surface. This trunk line probably extended around the four sides of Akapana's summit, but we have direct evidence for it only on the north (the drain fragments uncovered by Crequi Montfort [1906: 553] which Posnansky [1945] referred to as the "cloaca maxima") and west sides. On the west side, we excavated an extensive segment of this subterranean trunk line running in a north-south direction. The drain is rectangular in cross-section, and finely crafted of large (120 x 70 cm), precisely-fitted sandstone blocks with an interior dimension of 45 cm.that would have accomodated an enormous flow. The drain as a whole dips northward on a sharp downward slope of 12 degrees. To stabilize the construction on this slope, it is set on a foundation of flagstones, and individual blocks are joined together with copper clamps that were originally poured molten into depressions carved into adjacent stone blocks in the form of a double T . This elaborate subterranean trunk line collected water flowing from the channels draining the sunken court on the summit and conducted it inside of the structure to the next lower terrace.

Here the water emerges from inside the Akapana onto an exterior stone channel tenoned into the vertical terrace face. The water poured over the edge of the tenoned drain onto a stone channel on the terrace, flowed for a few meters on the surface, and then dropped back into the interior of the structure to the next lower terrace through a vertical drain. This process of alternating subterranean and surface flow on the stepped terraces repeated itself until the water finally debouched from the basal terrace of the Akpana through beautifully constructed tunnels. Eventually this water flowing from the Akapana's summit merged into a major subterranean "sewer" system that was installed three to four meters under the civic-ceremonial core of Tiwanaku. This system itself drains into the Rio Tiwanaku, and, ultimately, Lake Titicaca.

From this spare description alone, it is apparent that the system of draining the Akapana was complex, and it was not a structural imperative. A much simpler and smaller set of canals would have accomplished the basic function of draining accumulated rain water from the summit. In fact, the system as installed by the architects of Akapana, although superbly functional, is completely over-engineered, a piece of technical stone-cutting and joinery that can only be called pure virtuosity. There is clearly a dimension to this elaborate drainage network that goes beyond simple utility; a dimension that we can approach by posing a single question: why is the water repeatedly and alternately threaded inside and on the surface of the structure?

The answer to this question lies in considering a more profound mimesis between Akapana and the natural mountains of the Quimsachata range than the general morphological similarity of stepped-terrace mounds and mountain peaks. This deeper symbolic association is grounded in certain natural ecological processes that characterize the Quimsachata range. During the rainy season, almost every day, huge banks of black clouds swollen with rain well up in the deep ravines and inter-montane basins of the Quimsachata range. Sudden, ominous thunderstorms sweep the slopes with torrential rains, driving hail, and violent claps of thunder and lightning. Water rapidly pools in the saddles and peaks along the summit of Quimsachata, and then begins to flow down to the valley floor. But the flow is not direct. Surface water quickly drains into subterranean streams which periodically re-emerge down slope, gushing and pooling in natural terraces, only to tumble again down inside the mountain. The peculiarities of mountain geology and the erosive power of water combine to create this natural alternation between subterranean and surface streams. Runoff from the rains finally emerges from the foot of the mountains in rivers, streams, springs and spongy, marshy seeps. This fresh water recharges the aquifer of the Tiwanaku Valley and is the source for virtually all of the valley's irrigation and drinking water. In fact, the altiplano rainy season is also the principal growing season for major food crops, and the success of agriculture is tied to this critical period of rainfall. Vast tracts of raised agricultural fields developed by the people of Tiwanaku were dependent on this seasonal recharge of surface streams and groundwater. At the most primal level, the mountains were sacred because they were

the source of water that nourished people and their fields.

The analogy we wish to draw is transparent, and now complete. Akapana was the sacred mountain of Tiwanaku. It partook of the spiritual essence of the Quimsachata mountain range, the image of which was evoked by Akapana's stepped-terrace shape and by its clever, constructed mimicry of the natural circulation of mountain waters in the rainy season. The course of water flow on the Akapana replicated the pattern of nature: pooling, dropping out of sight, gushing onto terraces, emerging at the foot of the mound. In a driving, altiplano storm, the large, subterranean drains inside of Akapana may have even have generated an acoustic effect, a vibrating roar of rushing interior water that shook the mountain-pyramid, much like the thunderstorms rumbling across the peaks of Quimsachata.

Extending the analogy, Akapana was, in effect, Tiwanaku's principal earth shrine, an intense icon of fertility and agricultural abundance. Although it may have had a particular association with the mountains of the imposing and immediately visible Quimsachata range, Akapana's location in the civic-ceremonial core of the city suggests yet another kind of symbolic representation. Recall that Akapana rests in the center of the island enceinte carved out by Tiwanaku's great, ceremonial moat. Viewed in the larger context of its setting, Akapana becomes the mountain at the center of the island-world, and may even have evoked the specific image of sacred mountains on Lake Titicaca's Island of the Sun. Here another signification is layered onto the meaning of Akapana. In this context, Akapana is the principal huaca of cosmogonic myth. It becomes the mountain of human origins and emergence; it takes on, in other words, specific mytho-historic significance. The Tiwanaku élite who lived within the sacred, moated precinct were appropriating images from the natural order and merging them with their concept of proper social order. They were asserting, through a constructed, mimetic program of architectonic and sculptural display, their intimate affiliation with the life-giving forces of nature.

The architectonic arrangement of a central stepped-terrace mound in the center of an artificial island-city extends beyond the boundaries of Tiwanaku itself. This concept of urban spatial order, which evoked the place and time of cosmogonic (and ethnic) origins, extended to

important regional Tiwanaku centers such as Lukurmata, Pajchiri, and Khonko Wankane. In each of these regional cities, artificial features (canals or moats) carve the urban landscape into a ceremonial core of temples and élite residences arrayed within an island enceinte counterposed against extensive sectors of vernacular architecture. Moreover, at Lukurmata, the most intensively investigated of the Tiwanaku regional cities, the central ceremonial complex, organized around a terraced-mound, was furnished with a drainage network similar to that of the Akapana (Kolata 1989). Here, too, rain water collecting on the summit of the ceremonial complex was threaded through carved stone drains to the base of the artificially modified rock outcrop on which the complex was constructed. Water from the summit flows into the principal canal demarcating the island-core of the site, and, ultimately, into Lake Titicaca. At Lukurmata, this canal also drains an adjacent sector of raised fields , thereby associating the summit ceremonial complex with agricultural productivity through the connecting thread of flowing water.

We know, then, that Akapana served as a key shrine in Tiwanaku religion and élite ideology. But there remain other elements of the structure revealed in recent excavations that add fascinating textures to our understanding of its function and meaning. Although Akapana was a center of cult and ritual behavior, part of its summit was used for living quarters as well. Most of the Akapana summit was taken up by the centrally located sunken court which measured approximately 50 meters on a side. Access to the court was gained by the twin, axial satircases. We can assume that within the sunken court, much like at its counterparts the Semisubterranean Temple and the Kalasasaya, were placed towering stone sculptures with complex, religiously charged iconography. Flanking the central court, however, at least on the northern side where we completed major excavations, were distinctly secular structures.

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Here we uncovered a well-constructed suite of rooms arrayed around a central patio that appear to have served as residences. Although no hearths or food preparation areas were encountered on the summit, these rooms, as well as the central patio, were filled with large quantities of broken, utilitarian pottery, and botanical remains from the rooms indicate that the inhabitants were eating potato, corn, and possibly more exotic fruits from the semitropical yungas zones. Beneath the central patio, a series of burials were uncovered. A file of seated adults, originally wrapped tightly in textile mummy bundles, faced a seated male holding a puma-shaped *incensario*, or incense burner in his hands. Who might the inhabitants of such a sacred structure have been? The burials under the patio suggest that they were of a relatively élite stratum in Tiwanaku society. Drawing on analogy from the Inca state, the excavator of this complex interpreted the rooms as the residences of priests who presumably served as the principal ritual practicioners for ceremonies that took place on Akapana's summit (Manzanilla and Woodard 1990). This seems a plausible conclusion, particularly in light of the manner in which this residential complex was treated upon abandonment.

In the southwest corner of the complex, we discovered a major offering that was associated with the sealing and abandonment of one of the rooms. This offering consisted of 14 disarticulated llamas, copper pins, plaques, and a miniature figurine of a sitting fox, hammered silver sheets, a polished bone lip plug (*tembeta*), mica, obsidian, quartz and fragments of complex, polychrome ceramics, including a miniature *kero* (ritual drinking cup), a puma *incensario*, [Cross **reference her to exhibition analogs of gold, silver and ceramic artifacts**] and a vase with an image of a resplendent, crowned figure like that on the Gateway of the Sun. The offering itself was distributed spatially in a mannered, ritualistic fashion: the skulls and upper jaws of the llamas were found in the north and west sides of the room; the lower jaws of these animals were placed in the southeast corner; and the metal objects were concentrated in the northeast portions of the room. The polychrome ceramics, lip plug, mica, and fragments of obsidian and quartz stone tools were found immediately outside the entrance to the room.

As noted by the excavator (Manzanill and Woodard 190), the curious, structured distribution of these objects evokes a powerful sense that we have uncovered the final remnants of an important ritual. A sample of wood charcoal taken from these materials yielded a radiocarbon date of 1130 + 210 A.D., permitting us to fix the date of this ritual event with reasonable confidence between 1000 and 1300 A.D. Given that the offering itself rendered the room inaccessible and that the event occurs at a time of general abandoment in the city , we may be witnessing here a ritual of closure, a ceremony during which the great Akapana earth shrine and the practicioners of its cults were symbolically interred. In any event, the ritualized treatment accorded the sealing off of this room suggests that these habitations on Akapana's summit were not ordinary dwellings.

The summit structures are not the only ones associated with Akapana. Terraces farther down the mound show evidence of surface buildings with foundations of andesite blocks and adobe superstructures. A series of small, but finely wrought buildings were uncovered on the first terrace of the Akapana in excavations by Bolivian archaeologists in the mid-1970's (Cordero 1976). A number of these appear to be late constructions, perhaps even erected by the Inca after the abandonment of Tiwanaku. The Inca incorporated Tiwanaku as an important shrine in their imperial ideology, and were reputed to have built various structures in the city. But other such terrace structures are clearly associated with the florescence of Tiwanaku.

Excavations on the northwest corner of Akapana revealed a fascinating, and, to date, not entirely understood set of ritual offerings associated with the foundations of the structure and with buildings on the first terrace. Here we uncovered a series of 21 human burials commingled with llama bones and associated with ceramics that date to the Classic Tiwanaku period (ca. A. D. 400-800). What is curious about the burials is that most are incomplete, but the bones that were present from these skeletons are articulated in correct anatomical position.

Who were these people, and why were only parts of their bodies buried at the Akapana? At first glance, we assumed that these individuals (many of whom were adult males from 17-39 years old) were dismembered prior to, or shortly after death, conjuring images of Aztec-style sacrifice at

the hands of priest-warriors. But the fatal problem with this interpretation quickly emerged on closer examination: none of the bones showed evidence of cut marks, and there is little evidence of intentional physical violence. In lieu of a preternatural capacity to butcher a human body without leaving a mark on adjacent bones, the skulls and other body parts must have been removed *post mortem*, at some time after the corpse and its tough connective tissue had begun to decay. It is possible that these individuals died, or were sacrificed, and their bones were later interred at the Akapana in the form of mummy bundles. Although some body parts, such as the skull and lower limbs, were removed in the process of assembling the mummy bundle, the remaining portions of the skeleton remained articulated in anatomically correct position by the textile wrappings of the bundle.

But why did the people of Tiwanaku remove individual bones, and particularly the skulls from these burials? One clue to this intriguing puzzle comes from a tremendous offering of purposely broken, polychrome ceramics associated with five of these curious partial skeletons. This ceramic cache and its associated burials were uncovered within the destroyed room of a structure on the first terrace of the Akapana. The ceramics are iconographically associated with the Classic Tiwanaku period, and three radiocarbon dates fix the episode between 530 and 690 A.D. These dates, along with the identical burial pattern of partial skeletons, indicate that the offering was contemporaneous with those excavated along the foundation wall of the Akapana, perhaps even forming part of a single, ritual sacrificial event. The ceramic offering consists of hundreds of fine polychrome vessels fashioned into bowls and keros that we found shattered into small fragments. The polychrome bowl fragments from this ceramic offering have a consistent, standardized motif: painted bands of stylized human trophy heads. The keros display painted images of humans elaborately costumed as puma and condor figures. Trophy heads hang from the belts of these figures, or are worked into the elements of masks worn by the dancing celebrants portrayed on the vessels. Not infrequently, human trophy heads appear as the finials of staffs carried by the condor or puma-masked dancers. The trophy heads, although eerily stylized skeletal images, are clearly representations of actual human trophy heads. Cut and polished skulls have

been found in excavations at Tiwanaku, leaving little doubt that the practice of taking heads in battle as trophies was a central symbolic element of Tiwanaku warfare and ritual sacrifice. We know that the Inca took heads in battle and later transformed the skulls of particularly important enemy warrior's into macabre drinking cups used to celebrate victory over the vanquished foe (Rowe 1963:279). It is not surprising that the people of Tiwanaku adhered to similar practices.

If we can judge from the testimony of state art, the elites of Tiwanaku were obsessed with decapitation and with ritual display of severed heads. Grim images of decapitation abound in Tiwanaku art [**cross reference to exhibition displays of trophy heads on keros, and stone sculpture, esp. the chachapuma**] and many feature animal-masked humans (ritual warriors?), resplendent in costumes studded with pendant trophy heads, carrying sacrifical knives and battle axes. A class of stone sculptures from Tiwanaku, called *chachapumas*, portray powerful puma-masked warriors holding a severed head in one hand and a battle axe in the other, as if to capture in stone the horrible, and one imagines unforgettable moment of human decapitation. In September 1989, we discovered one remarkable example of a *chachapuma* at the base of Akapana's ruined western staircase in the same stratigraphic context as the human offerings placed at the structure's foundations. This ferocious looking sculpture, carved of dense black basalt, seems poised in a crouch, ominously displaying in its lap a human trophy head with long tresses of braided hair. [**cross-reference to exhibition sculpture**]. In addition to evoking the image of a gigantic earth shrine, the sculptures and esoteric offerings arrayed on and around the Akapana constituted a kind of ritual text glorifying the warrior-priests who formed the apex of Tiwanaku's ruling hierarchy.

Tiwanaku as an Urban Phenomenon

The impressive, visual quality of Tiwanaku's civic-ceremonial core, perhaps understandably, led some scholars of past generations (Bennett, Bushnell, Mason and Kubler, among others) astray in their interpretations of the city's social significance. They argued that Tiwanaku consisted only of a few major temples, along with some dispersed minor structures, and that, therefore, the site played a strictly ceremonial role as a center of religious pilgrimage. In this

conception, Tiwanaku was converted into a kind of "vacant ceremonial center," without substantial resident population. These scholars assumed that the stone architecture visible on the surface reflected the totality of human activity at the site. This same interpretation was extended to other regional Tiwanaku sites such as Lukurmata and Pajchiri, which were described exclusively as centers of cult activities. We know now that this interpretation was radically in error. These scholars never realized that most of the architecture at Tiwanaku and at its satellite settlements was, in fact, constructed of adobe on stone foundations. Without systematic, careful excavation such architecture is remarkably difficult to identify: over the centuries since abandonment, the construction material used in the ancient city simply melted back into the landscape.

Intensive research initiated by CIAT and continued in recent excavations sponsored by INAR and the University of Chicago demonstrates unequivocally that the ancient city was much larger than earlier scholars had assumed. The minimal area of the civic-ceremonial core together with surrounding sectors of dense habitations extends over 4 square kilometers, and the entire urban environment spawls over a total area of 6 square kilometers. The sheer size of the city alone confirms that the old, but surprisingly tenacious vacant ceremonial center concept can no longer be sustained. It is clear that a substantial population was permanently resident at Tiwanaku, and an estimate from 30000-60000 is not unreasonable.

Yet what is most fascinating about Tiwanaku as an urban phenomenon is not so much the gross dimensions and sheer population size of the urban landscape as its carefully planned character. Ongoing excavations in an area of vernacular architecture to the east of Akapana demonstrate that, at least for the Tiwanaku 4-5 periods (ca. A.D. 400-1100), residential barrios in the city were oriented to the same cardinal directions as the civic-ceremonial core. This implies that the concept of proper urban order played out in the ceremonial core of the city held in some sense for Tiwanaku's ordinary citizens as well.

These current excavations and intensive surface collections at Tiwanaku have also revealed that the inhabitants of the site were engaged in a wide variety of productive activities beyond the performance of religious ceremonies. We now have direct evidence for specialized craft

workshops that produced both utilitarian and ceremonial pottery, polished bone and stone objects, such as snuff tablets for the consumption of hallucinogenic drugs, status emblems of gold, silver and copper, and fine lapidary work of lapis lazuli, sodalite, turquoise, and jasper. Individual households clearly produced textiles and basic tool kits of obsidian, basalt and chert for their own use, as well as potentially for consumption by the city elites.

This recent archaeological work strengthens Ponce's (1972, 1982) basic concept of Tiwanaku society as stratified minimally into three classes: a governing group of lineages composed of warrior-elites who held political and religious offices; a "middle class" of artisans who worked as retainers of the ruling lineages; and a commoner class of farmers, herders and fishers who were the sustaining force for Tiwanaku's economic system. The common agriculturalists and herders, the bulk of whom lived and worked in the rural hinterlands surrounding Tiwanaku's urban centers, provided the surplus product that underwrote the complex system of public works that came to characterize Tiwanaku civilization. These public works included audacious projects for reclaiming vast tracts of rural land that were incorporated into the Tiwanaku economic system as dedicated agricultural estates under the direct control of Tiwanaku's ruling lineages (Kolata 1986, 1989, 1991).

It was from these remarkably productive estates that wealth in the form of agricultural surplus flowed back into Tiwanaku's urban society, providing the economic bedrock for unparalleled achievements in the esoteric realm of religious and political art. In a real sense, then, the urban and rural milieux were intimately interconnected in the process of creating Tiwanaku civilization. Perhaps the greatest enduring testament to the ingenuity and power of Tiwanaku civilization was the manner in which it reshaped entire natural landscapes for the benefit of its populations. Tiwanaku's harnessing of the natural environment (its enculturation of nature) found intense symbolic expression and recapitulation in the artificial, built environment of its cities, and in its monumental architecture and art.

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Notes

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