Heiau
Architecture

Summary

Ancient Hawaiian society at the time of Contact possessed a marked political and economic rift between two distinct social classes. This genealogical and economic division developed as chiefs strengthened their political control over society and competed with one another for power and resources. This change in chiefly leadership occurred circa A.D. 1400, and is evident in Hawaiian land tenure and social organization. Although Hawaiian traditional subsistence economy varied according to the fragmented nature of island environments, access to resources was carefully monitored by chiefs.

In sum, the social and ideological rift which existed between Hawaiian commoner and chief was profound. This rift was plainly visible in all facets of ancient Hawaiian life, particularly in the religious use of the *heiau* temple and hierarchical organization of the ruling chiefs.

CHAPTER 4

Heiau Architecture

The scientist only records what he has been able to establish as indisputable fact. In the same way, only what is unique to a person's experience is worth writing down as a guide and a warning to others.

Dag Hammarskjöld
Markings, 1964
New York: Alfred A. Knopf

Dag Hammarskjöld's words hold particular relevance for the historian who sifts through ancient and obscure tomes, in the pursuit of some equatable understanding of the past. However, dusty chronicles of the past do not, by themselves, comprise a complete account of past events. Rather, they document the somewhat biased perspectives of individual observers. Historians are always left to carry the burden of piecing together the past while at the same time trying to bridge the prejudices of the writers. For the scholar of *heiau* architecture, all of this and more is true. Information must be gleaned from such disparate sources as genealogical fragments, autobiographies, 19th century A.D. Hawaiian newspapers, ethnographic monographs, archaeological sketches, and anthropological analyses. Biases,

including those of scientists, must be identified and filtered out. Finally, all these views on *heiau* architecture must be properly coalesced and interpreted in order to accurately reconstruct *heiau* context. Let the reader be warned, however, that my biases as a scholar of archaeology dictate the picture that I paint here.

The goal of this chapter is relatively simple; to make some sense of the complex nature of *heiau* design and link any changes in temple architectural style to changes in chiefly leadership. For this referent body of literary data, expectations are generated concerning the nature of *heiau* design. These expectations are then tested with survey information collected from the 108 *heiau* remaining on the island of Maui. Specifically, two lines of investigation will be undertaken:

- The first line of investigation is a synthesis of *heiau* building traditions. The decision-making processes prior to the construction of a *heiau* are outlined, and evidence which documents the need for a large corporate labor force and a high degree of organization is presented. A quantitative analysis of *heiau* placement is undertaken from information derived from historic accounts. Aspects of temple location and orientation are discussed in the context of labor investment and temple location. In addition to this qualitative description of *heiau* building traditions, the types of rock used in construction are also documented.

- The second line of investigation focuses upon a review of *heiau* architectural design from the available archaeological literature leading to an analysis of current architectural style using information on *heiau* design from Maui. A hierarchy of *heiau* architectural elements and structural features is presented. This hierarchy of elements is important for determining *heiau* labor costs, as well as for devising a typology of *heiau* form. Results suggest that certain *heiau* foundation design features vary through time.

This analysis of *heiau* design links chiefly power and ceremonial architecture in two ways. First, chiefly ideological power is shown to be related to the ritual quality of the *heiau* temple. A temple was a sacred landscape used to reinforce the role of chiefly control and rulership. Second, chiefly economic power is shown to be linked to *heiau* architectural design, since the *luakini heiau*, the most powerful of temples, could only be constructed by the most powerful of chiefs.

Building Traditions

Hawaiian *heiau* were constructed on a smaller scale than the ceremonial architecture of chiefdoms found in England, North America, Mesoamerica, or South America. In general, *heiau* were built using relatively small, localized labor forces in comparison to those used for the construction of the Essex henges or Peruvian platform mounds (Earle 1988:8). Chiefs usually had jurisdiction to decide when and how a *heiau* was to be built. Smaller *heiau*

were commissioned by local chiefs or community leaders (HEN 1:197, 1:374; Malo 1951:176; Campbell 1967:131; Kamakau 1976:129-30; Valeri 1985:185), while chiefly residences and their temples were built or owned by specific royal retainers (Lisiansky 1814:109; Thrum 1909:38). Royal *heiau*, including all the *luakini* (sacrificial) temples and the most important temple of each functional type in each district, were under the jurisdiction of the *ali'i nui* (paramount chief) of a polity. For a complete discussion of *heiau* function, the reader is referred to Chapter 7.

Information on *heiau* building traditions is drawn from literary sources: Hawaiian histories, explorer and missionary accounts, ethnographic sources, and archaeological research. As discussed in Chapter 3, Hawaiians like Malo, 'I'i, and Kamakau compiled personal observations and informant interviews about *heiau* ritual practice. Their observations are vivid and extensive although somewhat biased. Because of the high social status of these Hawaiians, their writings focus primarily on the *luakini* temples, recording little information about the function of the smaller, regional *heiau*. The writings of early explorers similarly focuses more upon unusual events rather than the ordinary course of daily events.

In contrast, the observations made by missionaries and early ethnographers document an array of different temples; however, they fail to regularly record information on *heiau* in adequate detail. Information such as the names, histories, and locations of many temples were never recorded. Many times the writing of ethnographers also focused on the *luakini* temples and on the events which surrounded their administration.

Like early ethnographic accounts, modern archaeological research is also biased. Archaeologists frequently ignore the proper historic context from which their data are drawn, preferring to focus on environmental and ecological problems. This is because archaeologists are forced to focus on the remains of defunct *heiau*, using fragments of data in an attempt to reconstruct past events.

Architects

What is known about *heiau* building traditions comes primarily from written sources on the construction process of the *luakini heiau*. Little has been recorded about the building and use of smaller *heiau*. Unlike a small community *heiau*, a *luakini* temple was commissioned when a ruler wanted to make war upon another chief, or wanted to avert a calamity such as a drought or famine. It was first decided whether an existing *luakini* temple needed refurbishing, or whether a new temple needed to be built. David Malo notes that:

> **The king, in the first place, inquired of his high priest in regard to building a *luakini*; whether he thought the old *luakini* would answer, provided the house and the fence were renewed; whether the old stone wall should be allowed to remain; and whether the old idols should still continue to be used [1951:161].**

If only the remodeling of an existing temple was required, the *heiau* was made *noa*, or "free," so that the workmen were able to enter the temple and refurbish it. Sometimes new walls or fences were added, sometimes whole

buildings were erected. When the construction project was completed, the *heiau* was again made *kapu*, or "forbidden." The whole district was then ritually purified and the temple was reconsecrated with an elaborate feast, at which hundreds of pigs were baked and consumed (Malo 1951:163-72). This same process of purification was also undertaken after the completion of a new *heiau*.

It was an arduous task to build a new *luakini heiau*. The construction project required tons of stone for its foundation, special building materials, such as different types of *'ohi'a* wood for its wooden furnishings (Thrum 1910:59), and elaborate rituals of purification. Before any of this was to take place, however, the *kahuna kuikuhipu'uone* was summoned. The *kahuna kuikuhipu'uone* was the priest concerned with locating and building *heiau*, homes, fishponds, and the like (Malo 1951:163; Valeri 1985:137). This specialized priest was in effect a professional architect, familiar with the building plans and construction techniques of many *heiau*. According to Malo:

> It was his function to exhibit a plan of the *heiau* to the king; because this class of persons were [sic] thoroughly educated in what concerned a *heiau*. They were acquainted with the *heiau* which had been built from the most ancient times, from Hawaii to Kauai, some of which had gone into ruins. These *kahuna kuikuhipu'uone* knew all about these old temples, because they studied them on the ground, had seen their sites and knew the plans of them all.
>
> They knew all about the *heiau* which a certain ancient king had built, as a result of which he gained a victory over another king. That was the *heiau*, the plan of which the *kahuna kuikuhipu'uone* explained to the king; and if the king was pleased, he first made a sort of plan of the *heiau* on the ground

> **and exhibited it to the king with an explanation of all its parts, so that he could see where the fence was to be run, where the houses were to stand, and where was the place for the *lananu'umamao* [oracle tower] with the idols [Malo 1951:161].**

The responsibilities of the *kahuna kuikuhipu'uone* suggest that the one goal when constructing a new temple was to imitate, or at least incorporate, architectural elements of those *heiau* built by successful chiefs. If this were true, however, then *heiau* form should be similar and homogeneous, since architects would tend to duplicate successful design elements. In fact, the opposite is true. *Heiau* form is heterogeneous; resulting in no two *heiau* being identical in their design (Thrum 1907b:50). McAllister in his study on the *heiau* of O'ahu (1933:9), concurs with Thrum, believing that classifying temple design is impossible because of extensive stylistic variability. Furthermore, Bennett (1930, 1931) was unable to explain the large amount of variability present in *heiau* construction in his classification of five types of "great *heiau*." Variability in *heiau* form is also evident in the placement of the wooden furnishings atop a *heiau* foundation (Malo 1951:162; 'I'i 1963-33-5), and in the site plans of a number of *luakini heiau* (e.g. Ladd 1970:28-30, 1972, 1986).

The heterogeneous nature of *heiau* form, both in terms of its foundations and placement of internal features, makes them unique among other types of ceremonial architecture found in Polynesia. For instance, the *marae* of central Polynesia and the *ahu* of Easter Island are more homogeneous in style and in the location of internal features (see Ayres 1973:201-7). Even the *heiau* of Necker and Nihoa islands (Emory 1928), in Haleakala crater (Emory 1921), and on Mauna Kea (McCoy 1985), which are thought to be the earliest

constructed *heiau* in Hawaii because of their similarity to the eastern Polynesian *marae*, are extremely homogeneous in form.

Interestingly, the breadth of a *kahuna kuikuhipu'uone*'s knowledge was not utilized to assure accurate duplication of an old plan of construction. Rather, it was applied to create new architectural elements or incorporate combinations of older elements. Thus an architect's goal was to design something unique and unlike any previously built structure (Buck 1964:514). This was done in order to immortalize a chief, as well as bring that chief success by incorporating design features used in the temples of prosperous chiefs. This is consistent with what we know of *heiau* design plans. Most *heiau* architecture conforms to broad design patterns, but each temple is unique in its stylistic detail or arrangement of internal features (Bennett 1930:21).

Labor Organization

Once a temple design was decided upon by the *kahuna kuikuhipu'uone* and his chief, the appropriate labor force was mustered. In principle, it was the responsibility of the chiefs and their retainers to build the temple. During the construction of Pu'ukohola *Heiau* at Kawaihae (Kohala district, Hawai'i), a *luakini heiau* built for the conquest of Hawai'i, Kamehameha himself carried rocks for its construction (Fornander 1969, II:328; Kamakau 1961:154-5). In reality, however, the construction of a temple was probably left up to the general work force; the chief's participation being merely a symbolic gesture. According to Kamakau, the *maka'ainana* (commoners) were conscripted for

the construction of a temple (Kamakau 1976:135). Often, thousands of workers would be employed for a building project. For instance, Fornander mentions an interview of an informant who witnessed the construction of Pu'ukohola *Heiau*:

> **The author a few years ago conversed with a centenarian Hawaiian at Kawaihaeuka who had assisted in carrying stones towards building this Heiau. His description of the thousands of people encamped on the neighboring hillsides, and taking their turns at the work, of their organisation and feeding, their time of work and relaxation, the number of chiefs that attended, and who, as the old man said, caused the ground to tremble beneath their feet; and the number of human victims that were required and duly offered for this or that portion of the building- this description was extremely interesting and impressive [1969, 2:328 n. 1].**

This description suggests that a building project was quite labor intensive, the goal being to complete a *heiau* as soon as possible with a larger labor force, rather than to use a small labor force over a long period of time. The large size of the *heiau* building crews suggests that Hawaiian labor organization was probably command corvee labor (Abrams 1984:114), where participation in chiefly building projects was strictly enforced, either physically or symbolically. The need for thousands of laborers probably necessitated workers to be summoned from distant communities as well as nearby ones although no evidence exists regarding the amount of labor a community was required to contribute or the way the different communities were coordinated. Despite these limitations, the ability to invoke and coordinate a large labor force is still an excellent measure of an *ali'i nui*'s influence and power, and can be used to roughly indicate the size of the

polity. It should also be noted that work forces mustered to construct a *heiau* were comprised of men only (Kamakau 1961:154). Women were excluded from construction crews primarily because of their ritual impurity (Valeri 1985:86) although women probably contributed in support roles.

The construction and use of war temples further document that Hawaiian labor organization was command corvee in nature. Besides bringing to bear tremendous economic and symbolic pressure upon the subjects of a polity, the construction of a war temple also allowed an *ali'i nui* to easily draw conscripts into military service from the construction crews. Once requited, soldiers were under the direct command of their chief, who frequently put them to other tasks such as cultivation of chiefly lands in order to keep them in service (cf. Kamakau 1969:116). Often times, such a display of force and coordinated effort was enough to discourage an adversary, resulting in a political victory even before a war began (Valeri 1985:235). However, the attempt to build a temple could have a negative effect by provoking a rebellion. For example, during the construction of Wailehua *Heiau* at Wailuku (Wailuku district, Maui), the subordinates of King Kamehamehanui were incited to rebel because of arduous work conditions (Kamakau 1961:73, Thrum 1909:45).

A final point concerning labor investment is that traditional accounts suggest that *heiau* requiring large labor forces to build were probably constructed in multiple building episodes. As previously mentioned, small amounts of labor expended over a long period of time can produce the same total investment as large amounts of labor expenditures over short periods of time. Excavations at Kane'aki *Heiau* (Ladd 1970; Green 1980:63-69) at

Makaha (Wai'anae district, O'ahu) and Pahua *Heiau* (Davis 1986) at Manalua (Kona district, O'ahu), confirm that Hawaiian temples were not constructed in a single building episode, but rather in a series of distinct stages. Kane'aki is considered to have first been a community *heiau* constructed in the 16th century A.D., which then was expanded in size and took on the status of a *luakini heiau* in the 17th century A.D. Despite the periodic reconstruction of certain *luakini heiau*, traditional accounts repeatedly suggest that a major building episode of a *luakini* temple was usually tied to a significant political event, such as a military conquest or the ascendancy of a ruler. This may or may not hold true for smaller building episodes such as minor modifications of a *heiau*'s features.

Placement

An analysis of temple placement and layout is important for a number of reasons. For example, a temple's function can be determined by identification of internal features and how they were arranged. Temple location can be used to help calculate the overall labor investment used to construct a *heiau*. Certain temples are built atop lava ridges or hilltops and incorporate these natural features, reducing the cost of their construction. Similarly, temple placement can also help locate the source of a *heiau*'s building material.

What we know about temple location comes from literary sources about building *luakini heiau*. Before construction began, the temple architect (*kahuna kuikuhipu'uone*) was responsible for determining the location and layout of a

heiau. According to Kamakau (1976:132), a *luakini* temple was often constructed upon "the site of a place of old." Kamakau's words corroborate the modern Hawaiian aphorism which states that it is not the *heiau* which makes a place sacred, but the place which makes a *heiau* sacred. The construction of a new *heiau* on a "site of old" could mean that either a new structure was to be placed in the midst of the ruins of an older temple, or that a current *heiau* was to be renovated. Tradition often assigns the construction of a *heiau* to a chief who later rebuilt or renovated an ancient temple on the same site (Fornander 1969, 2:102; Thrum 1908:60); little distinction seems to be made between the notion of temple "construction" and "reconstruction" (Valeri 1985:235).

There is also evidence that other criteria were used for the placement of a *heiau*. *Heiau* were often located relative to the domain of a particular god. For instance, fishing shrines are usually found near the sea, under the domain of Ku, Ku'ula and Hinahele. Likewise, war *heiau* were sometimes built near battlefields, such as Nu'uanu valley, O'ahu (Kamakau 1961:291), Wailuku, Maui (Thrum 1909:45-6), or Kawaihae, Hawai'i (Fornander 1917, 4:326; 1969:121-2). As a rule, however, most *luakini* temples were located near the communities where the *ali'i nui* resided in each political district ('I'i 1963:160) although usually built some distance away from populated areas (Thrum 1906:118). The concept of "sanctity" seems to have been important in locating a *heiau*, and the relative sanctity of a place could be sufficiently inadequate to make a priest request to the *ali'i nui* to move a *heiau* because it was built upon "a place where to excrete" (Valeri 1985:254).

The local topography of a temple was intimately tied to the concept of religious "sanctity." Large *heiau* were generally situated upon prominent locations such as hill tops, bluffs, or knolls. This higher ground affirms the divine and inaccessible nature of high-ranking *ali'i*, while affording an excellent view of the surrounding countryside and coast. Smaller *heiau*, on the other hand, were usually placed within villages, upon mountain slopes, in upland valleys, along the coast, or in any other location that would best serve the people (Bennett 1931:35). Shimizu's (1980) analysis of *heiau* topography found that *heiau* on Oahu were consistently located on the physiographic divisions between the fertile plains and upland areas rather than on land used for agriculture or residence.

The desire to place *heiau* upon hill tops or knolls had a strong influence on their design. These topographical features were often natural outcrops of rock or promontories sloped to a high degree and incorporated into the overall *heiau* design. Thus, areas which appear to be constructed platforms or retaining terraces actually consist of a natural bedrock core covered with a masonry veneer.

The incorporation of local topography makes any cursory analysis of *heiau* form suspect in two ways (Hommon 1987:24-5). First, the placement of *heiau* architectural elements tends to be influenced more by the contour of the landscape than by the abstract plan imposed upon the site by the architect. This suggests that the location of a *heiau* played a much more important role in its design than previously thought, and may partially explain the large amount of variability present in *heiau* form. Each promontory varies in its size, shape, and orientation of natural rock outcrops. Given the close fit of

individual *heiau* design to local topography, a *kahuna kuikuhipu'uone* most likely chose the location of a *heiau* first, then contoured specific architectural elements to fit local topography.

Second, some platforms and terraces that appear to be solid architectural elements are actually masonry veneers, and thus are deceptive as to the amount of labor used in their construction. Obviously, economy of time and effort were important considerations when building a *heiau*. Any attempt to calculate the number of labor-days necessary for its construction will have to take into account this Hawaiian practice of incorporating local topography. Care must be taken to not overestimate labor investment costs.

Orientation

Little is known about *heiau* orientation. Although the cardinal directions were not systematically used, an east/west (*hikina/komohana*) axis was recognized. If one was to face west, to the right (*'akau*) would be north, and to the left (*hema*) would be south (Malo 1951:9). There is some indication that *luakini heiau* were oriented along an east/west axis. Malo notes:

> **The plan of the *luakini* was such that, if its front faced west or east, the *lana-nuu-mamao* [oracle tower] would be located at the northern end. If the *heiau* faced north or south, the *lana-nuu-mamao* would be located at the eastern end; thus**

> **putting the audience either in the southern or western part of the *luakini* [1951:162].**

The east/west directions can also be used in a relative manner; that is, *'akau* can be used to define "to the right" and *hema* can be used to define "to the left," both relative to the position of the observer (Malo 1951:9-10). Kamakau (1976:135-6), it seems, uses this relative orientation system when placing the position of the *'anu'u* on the right side of the temple. However, as Valeri (1985:254) notes, it is not clear whether this "right" or "left" is relative to the observer facing the entrance of a temple from the outside or the inside. He goes on to show, based upon a comparison of 'I'i's description and Bloxam's plan of Hale o Keawe *Heiau*, that the right/left axis is used with respect to an observer facing the door from inside the temple rather than the Western orientation of the observer facing the door from the outside of the temple (Valeri 1985:254-5).

Although neither Kamakau nor 'I'i (cf. Ii 1963:33,139) explicitly identify the front of a *heiau*, Valeri (1985:254-6) has attempted to determine *luakini heiau* orientation based upon this east/west axis (Table 4.1). Valeri compares historic descriptions with a series of temple plans in order to identify the underlying principle which dictated the orientation of a *heiau*, assuming that the entrance opened up upon the "front" of a *heiau*. What he found was that the orientation of *luakini* temples from the island of Hawai'i was highly varied. Both Hikiau *Heiau* at Kealakekua (Kona district) and Hale o Keawe *Heiau* at Honaunau (Kona district) agree with both Malo's and Kamakau's description of *luakini* orientation. The entrance to Hikiau was to the north, and its tower was located in the east. Hale o Keawe had its entrance in the