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Meaning in Environment and Cultural Change

A Case Study in Two Pueblos

Master's Report
University of Arizona
College of Architecture
Spring, 1995

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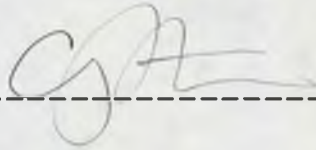
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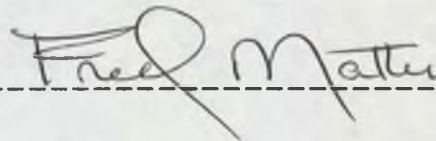
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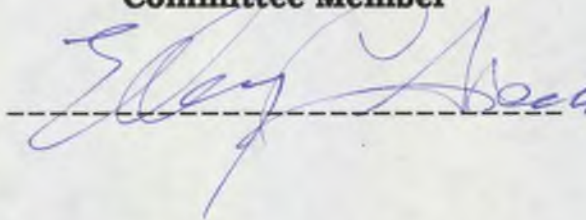
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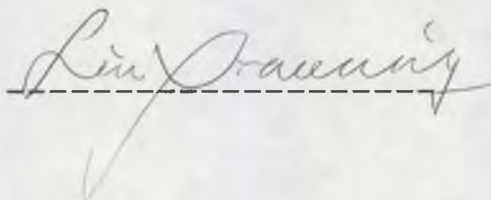


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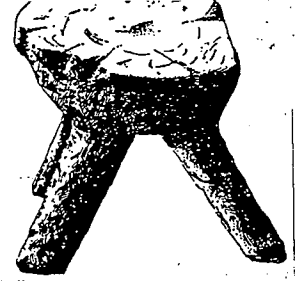
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INTRODUCTION



“ Culture is ultimately translated into form through what people do as a result of what is in their heads and within the constructions of their situation.”

Amos Papoport.

I have long been fascinated by built form in early civilization. My understanding, however, followed from my undergraduate education in architecture to evaluate built form mainly from external appearance and paid little attention to how people design and interact with the built form.

My graduate education has offered me an opportunity to study the relationship between physical form and culture. The study encourages me to understand the meaning of built form not only by looking at the physical features in terms of shape , color, texture, and space but also, more importantly, by examine built form in terms of culture which to a great extent explain why the physical form to be that way not others. The meaning of the built form could be seen as people's understanding of their life and the opportunity natural environment offers while culture in a general sense is a typical way of life of a group of people who intensively share values. Thus there is a close relationship between built form and culture. It seems that culture does play a significant role in making the built form meaningful and understandable.

Furthermore the graduate study has stimulated me explore the relationship between built form and culture in a dynamic context, that is to understand the meaning of the built form in environmental and cultural change. It is my understanding that the quality of built form could be better understood by examining the change and continuity in built form and culture. Change may suggest the nature of some components which are easier to be changed while continuity may reflect relative enduring aspects of certain components which keep the balance in changing process.

My master report follows this interests to look at the issue of change and continuity in terms of built form and culture in two pueblos: Zuni and Taos Pueblos. I choose these two pueblos because, on the one side these two cultural groups have had constant contacts with Spanish, Mexican, and Angola cultures respectively since the middle of the sixteenth century and have experienced the change in their culture and physical form; on the other side they provide different pictures which are very worthwhile to look at in order understand different dimensions in environmental and cultural change.

In Zuni Pueblo the built form is seemingly modernized while in Taos village defined by the wall the physical environment remains basically native. This difference may be because people in these two Pueblos have different attitudes towards the cultural change, particularly the shift from subsistence agriculture to cash economy.

This case study is a comparative analysis of the situations in Zuni and Taos Pueblos. The comparison has two dimensions. The one is the comparison between Zuni Pueblo and Taos Pueblo and another is the comparison between the past and present in each cultural group. Correspondingly the thesis consists of two parts. The first part deals with the relationship between built form and natural environment, surrounding social situation, and culture in two cultural groups around the late nineteenth century. The second part discusses the issue of change and continuity in terms of built form and culture to try to understand the meaning and identity of the present built form in two pueblos.



Part One
Built Form, Meaning,
and Formation



CHAPTER ONE
EXTERNAL FORCE AND BUILT FORM



The idea of built form discussed in my master report can be understood as an extension of a concept of architecture, which means not only the physical architecture people design and operate but also the meaningful natural environment where people live and multiply. That is to say, built form is designed environment in the sense of both meaningfully physical manipulation of man made environment and the imposition of meaning on the natural surroundings. The meaning of the natural environment is the occupant's understanding of the interaction between their life and opportunity the natural environment offers.

Natural environment, to a great extent, functions as an external force shaping built form mainly in terms of the availability of the natural resources for building materials as well as for people's life. Here the external force means that the existence of the force is objective and provides a context which has more or less influence upon the physical environment.

Architecture, the main component of built form, is an artifact that people physically manipulate to deal with the given natural environment; therefore, one of the obvious dimensions of architecture is that it serves as a fundamental shelter for people's survival. This dimension, plus the available building materials and the building techniques, defines some of the external characteristics of

architectural form in terms of site selection and some visual qualities. This is the case especially in primitive cultures. For one reason, people's subsistence and the natural conditions for the subsistence are critical considerations for the selection of building sites since people depend very much on the natural environment for survival. For another reason, unlike modern technology which can turn iron ore into steel of different shapes for construction of building, in primitive cultures there is no big visual difference between natural materials available at hand and building elements made of these materials. That is to say, the process of operating natural materials is very simple. Such obvious directness could easily lead to the understanding of the relationship between natural environment and some of the physical features of architecture. From this point of view it seems that some physical characteristics of architecture both in Zuni Pueblo and Taos Pueblo around the late nineteenth century may be understood by examining their respective natural surroundings. Let us look at Zuni Pueblo first.

The Zuni Pueblo is located in western New Mexico, about thirty-five miles south of the town of Gallup New Mexico (Fig.1). The land is a high semi-arid region at about 6,300 feet above sea level. At this elevation the summer is warm or hot but the temperature drops significantly from daytime to night time. Winter is cold and spring and fall is dry. The precipitation of each year is uneven and the average of the annual precipitation is less than thirteen inches, most of which comes in two seasons : rain in summer and snow in winter. Actually there was little rain and little snow. Insufficient precipitation

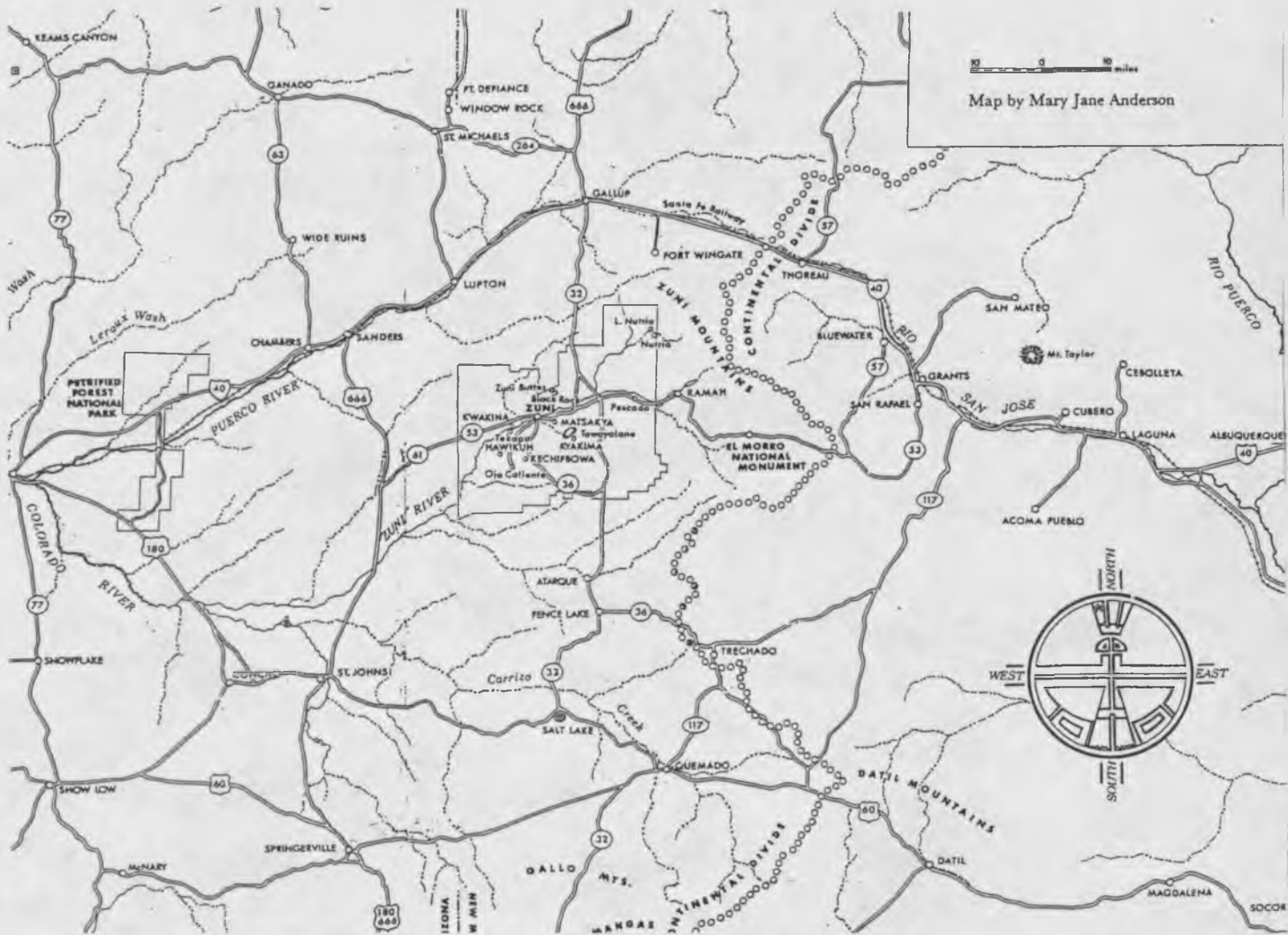


Fig. 1 The Zuni Country in its regional setting.

(All Photographs by author unless otherwise noted)

caused difficulty in keeping the crops growing. Sometimes, where there is little or nothing on the surface of the land, heavy summer rains can either wash out a field or cover it a foot deep with mud. In addition, the severe winds of early spring exacerbate the erosion hazard wherever the land cover is sparse.

There are precious few springs and few streams of running water in the Zuni land. The course of Zuni River(Fig. 2) is determined by both the Zuni Mountains and the gradual fall of the valley to the southwest. The river is the major water resource of this land. Ground water comes from falling rain and snow, but in this land the water does not flow very far from its source.

The Zuni village was located on the north bank of the Zuni River and is still the core area of the Zuni land. The Zuni village was on the original site of Halona, one of the six villages on the Zuni land before 1680, and had become a main cluster for the permanent residence at the beginning of the eighteenth century. To the east of the village rises a mesa, Towayalanne or Corn Mountain (Fig.3), which serves as a magnificent landmark as well as one of the precious natural resources. The cover on this land is rich, ranging from the large tracts of ponderosa pine on the plateau to the scrub oak , juniper, and pinon found on the lower slopes, including sage brush, yucca, and the grasses found in the valley (Fig.4). The soils of the land grade from sandy to sandy loam, mainly derived from sandstone. There were limited areas of adobe clay in the valley bottom.

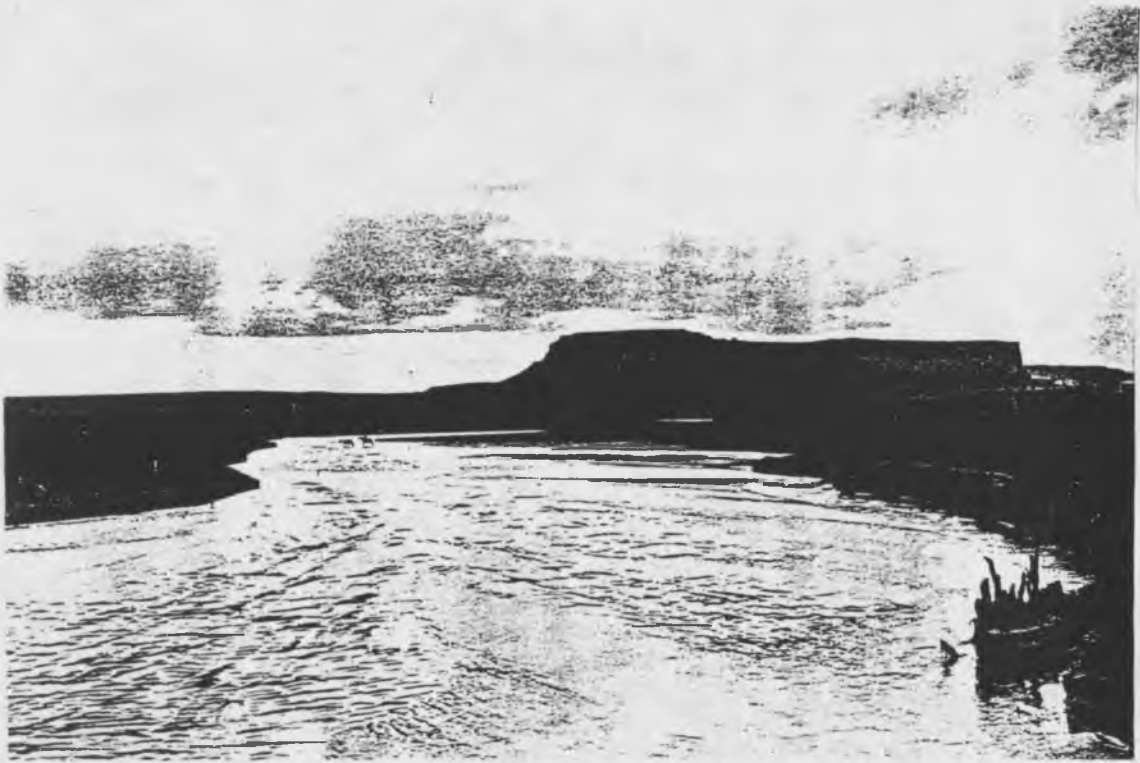


Fig. 2 Zuni River and Silhouette of Towayalane.

Photographed in 1911 by Jesse L. Nusbaum. M



Fig. 3 Dowa Yalanne or Corn mountain.

The selection of such natural environment may suggest the significance of the interaction between the Zuni people and their physical settings.

The settlements along the Zuni River may demonstrate that the location of the habitation was of critical concern to the people. For the water was an indispensable element for meeting people's biological and physiological needs and for the subsistence-agriculture which substantiated the stable pattern of habitation. Just as many great rivers nurtured great civilizations, the Zuni River contributed significantly to the development of Zuni Pueblo.

There seemed, therefore, a relationship between agriculture and the pattern of settlement. The location took the advantage of convenience to the large areas of arable land and the water course. There were three other farming villages at Pescado, Nutria, and Ojo Caliente, established probably in the eighteenth century.

The building materials on the Zuni land were mainly adobe, stone, and wood. These materials, plus the simple technique of manipulating them, produced organic visual qualities of architecture in terms of the building colors, the building texture, and the interplay among building elements (Fig. 5, 6, 7).

Indeed adobe played a dominant role in the of visual quality of architecture since this material constituted the majority of the external surface of the buildings space (Fig. 8, 9).



Fig. 4 The Zuni land



Fig.5 Zuni building.



Fig. 6 Zuni building today.



Fig.7 Old Zuni pueblo.



Fig.8 Zuni pueblo. Photographed in 1879 by J. K. Hillers

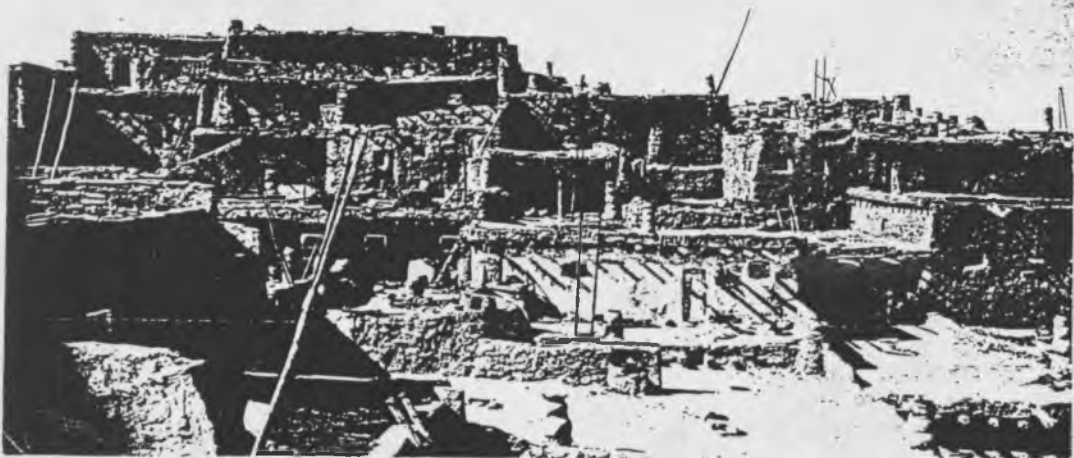


Fig.9 Zuni pueblo. Photographed in 1879 by J. K. Hillers.

Adobe is a mixture of sand and clay combined in proper proportion so that an ideal hardness can be achieved. Although the climate of the Zuni Pueblo was not wholly suitable to the employment of adobe construction since it required protection and constant repairs to insure the durability, adobe possessed certain good qualities such as economy and good thermal and sound insulation. Adobe was also an easy building material with which Zunis made brick for the construction of walls or for the coating of a stone wall or an oven.

There were also stone structures in Zuni Pueblo because the position of the village in the open plain at a distance of several miles from the nearest outcrop of suitable building stone naturally led the builders to use stone. Mindeleff discoursed that the fall of water such as the roof-drain had removed the outer coating of mud that covered stone work. The stone, besides being used for the body of walls and ovens, was also employed for the floors inside houses, for the roof drains, for roof entrances and so on. Wood was used for the beams and rafters which form the roof structures, for the doors, the ladders and racks.

The selection of the site for habitation implied that people valued the easy access to the tillable land more than the defensive motivation. The Zuni Pueblo was often attacked by their neighbors, the nomadic Apache and Navajo; therefore such selection could be seen as a compromise since the defensive consideration seemed reflected in the building organization: multi-storied compact clusters with outdoor ladders for reaching the upper terraces. It was a compromise because the site was vulnerable. When the defensive motivation was

overwhelming, Zuni took to Corn Mountain as refuge. In the late 1600s they moved to the mountain after participating in the Pueblo Revolt of 1680, fearing Spanish retaliation.

The obvious defensive consideration was that there were few external doors in the rooms of the ground floor and these rooms were mainly used for storage with entrances on the roofs. The outdoor ladders, a unique feature in the building organization, mainly functioned for vertical circulation. Since each house unit was roughly in rectangular shapes of different size, the irregularity of layout may be partially attributed to the compact juxtaposition of these units for the purpose of security. Also the passages to the fringe of the village were narrow, which was good for the defensive purpose.

The orientation of the terraces was toward the east and south, which was a pragmatic response to the severe sandstorms, winter winds, and blistering afternoon summer sun that came from the west.

Probably taking the defensive motivation as a starting point, people designed and built the distinct building organization which simultaneously possessed aesthetic quality in terms of richness and complexity. The ladders as the connections between the grounds and terraces were striking and attractive because as movable elements they contrasted to the fixed buildings. Also these ladders against walls created an angular dimension of line of force. The visual richness was also due to the irregular arrangements of the houses in terms of both various sizes of the houses and different roof levels (Fig.10, 11). The



Fig.10 Corn drying on the rooftops. 1879-photo courtesy the Smithsonian Institution, National Anthropological Archives.

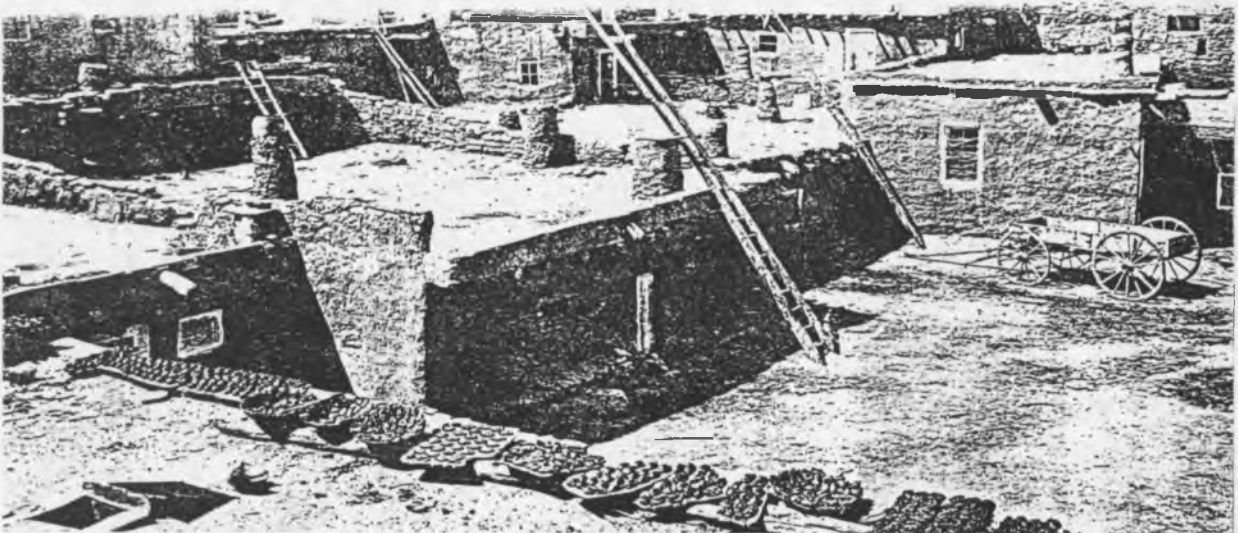


Fig.11 The old terraced pueblo. About 1897 photo courtesy the Smithsonian Institution.

terraces in such context had dual functions: as roofs and floors or potential floors at the same time and such functions served as a unique container for accommodating of the collective behavior.

There are and were some similarities between Zuni Pueblo and Taos Pueblo in terms of natural surroundings and physical features of architecture.

Taos Pueblo, northernmost of the Eastern Pueblos, was located near the Rio Grande River in northern New Mexico, about seventy miles north of Santa Fe (Fig.12). Compared with the Zuni land, the natural environment of Taos Pueblo offered better opportunity for people's life mainly in the sense of sufficient water since the Rio Grande River (Fig. 13) ran through the Taos Plain and the Taos Mountain (Fig.14), ten miles to the northeast of the pueblo, contained precious steams. Taos mountain, like Corn Mountain in Zuni, served as one of the precious natural resources for Taos.

Such natural context contributed to certain characteristics of the physical form of Taos Pueblo, which were also identical in Zuni Pueblo: the settlements along the river (Taos Pueblo was on the banks of the Taos river Fig.15); visual quality of organic building elements; dominant adobe construction; striking interplay between the adobe walls and the beams or rafters protruding the external walls (Fig 16) . In Taos the compact multi-storied terraces, the ladders for vertical circulation (Fig.17), and the wall of four feet high (Fig. 18) can be attributed to the stronger defensive purpose for Taos Pueblo which

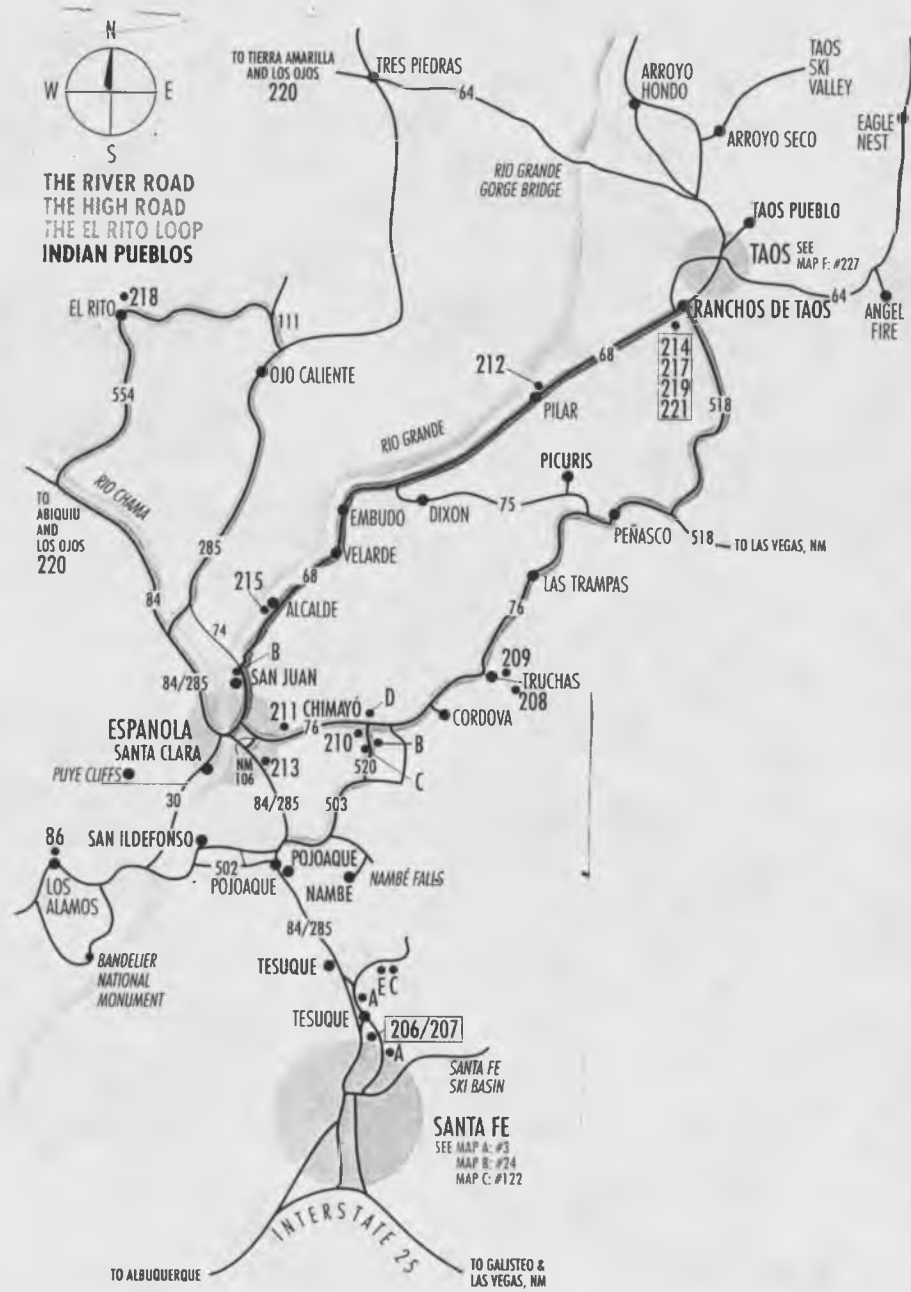


Fig 12 Taos location.



Fig.13 Rio Grande River



Fig.14 Taos plain and Taos mountain



Fig.15 Taos pueblo on the bank of Taos river.



Fig. 16. Taos pueblo.



Fig.17 Taos pueblo.



Fig.18 Taos wall attributed to the stronger defensive purpose.

was the gate between the pueblos and the Plain tribes. As a result, Taos Pueblo had more contact than any other pueblos with Plain tribes that often attacked and traded with the pueblos.

Furthermore, besides the influence upon the physical form discussed above, the given and selected natural environment and surrounding social environment provided the context based on which occupants developed and elaborated ceremonials that embodied people's understanding of the nature of their life and of their physical environment.

It could be argued that some physical characteristics could be attributed to the influence of natural and of outside social factors. The meaning of the built environment, however, went beyond these influences because the physical manifestation significantly embodied the cultural values.



CHAPTER TWO CULTURE AND BUILT FORM



Culture in a general way links all aspects of life of a group of people sharing values. From this point of view culture could be considered as an internal force shaping and giving the meaning to the physical environment for regulating the interaction between people and their natural surroundings.

Physical form designed under the guidance of cultural values is communal built form. Such built form, as Pietro Belluschi defined, is a "communal art, not produced by a few intellectuals or specialists but by the heritage, acting under a community of experience." The heritage and experience demonstrate the people's understanding of the relationship between their life and the physical form.

Furthermore culture could be seen as collective realization of values both in theory and in practice. Values mean people's attitudes towards reality or in other words subjective understanding of the objective world. The realization is an interpretation or representation through two mechanisms. The one is philosophy that is the realization of values in theory and the other is collective behavior and artifacts which are the realization of values in practice. The religion is a key component of culture and could be regarded as the highest value in the culture.

The communal architecture as an artifact is of course the realization of values in practice; therefore, architecture can represent certain collective concepts.

There seemed a relationship between the building layout of the Zuni village in the late nineteenth century and the concept associated with the Zuni myth-the heritage handed down from their ancestors.

Obviously the myth as metaphysical explanation answered basic questions. The questions were what was the original relationship between nature and people and where and how people came from? The questions seem a universal concern of people both in primitive culture and in modern culture. The answers to these questions in Zuni were as follows.

The ancestors of Zuni ascended from the dark fourth womb under the earth. The stars were told by the God to go down into the fourth womb where the people lived to bring them up to the surface of the earth to live their deserved life because although there were always many people on the earth, few of them were desirable. The Sun felt very lonely: he only came up and went down in and no people in the morning gave him a sacred meal and no one gave him prayer-sticks.

When these people emerged onto the surface after struggle, the strong sacred scent of the wombs penetrating onto the surface killed the living on the face of the earth. Thus a new group of people came to the middle place(Zuni People, 1972, pp. 129-130).

The middle place of the world (Fig.19) was on the edge of the Zuni village. This middle place (Itiwana in Zuni language) was where their ancestors settled a long time ago after a long search. "At Zuni the term 'The Middle ' is attributed to both the village and to the winter solstice. Here the center of space becomes the center of time as well." (Ortiz, 1972, P. 143). There was a sacred spot at a few hundred yards south of the road to Oja Caliente. The spot was marked by a shrine built of a few slab of rocks, under which there was a subterranean chamber. Each year in winter , at this site, the Shalako, Messengers of the gods, placed prayer plumes and ran a ritual race near the shrine before their nocturnal entry into the village.

The middle was the seventh dimension in the Zuni orientation system. There were other six points for orientation, " each with its own color and hierarchical position. The yellow signifies north, the blue west, the red south, the white east, the multicolored zenith, and the black nadir" (Tedlock, 1979, P.499). The middle was the ideal place for the Zunis.

There was a symbolic connection between each color with its corresponding direction and natural phenomenon, which demonstrates the meaning of the life experiences in the given environment. As Cushing observed that " the north is designated as yellow with the Zunis, because the light at morning and evening in winter time is yellow, as also is the aurora light. The west is known as the blue world or gray twilight at evening, but also because westward from Zuni land lies the blue Pacific. The south is designated as red, it

being the region of summer and of fire, which is red; and for an obvious reason the east is designated white (like dawn light); while the upper region is many colored, like the sunlight on the clouds, and the lower region black like the caves and deep springs of the world." (Cushing, 1891-1892, P.396). And the seventh point was midmost colored of all these colors for it was the central world.

The orientation system may influence the building layout although it may look irregular with little planning. The house units seem to be growing freely but there is a tendency for each building block to be seen as a solid entity defining the boundary of the village. The central area was relatively void thus creating a sense of center.

The six kivas (Pueblo ceremonial structure, Fig.20,21,22) were associated with six divisions of the Katchina (the best known Zuni society to the outside) to be congruent with the six points of orientation. Each kiva was also associated with the clans. The orientation of the kiva roof hatchway was southeast, which had symbolic connection with the ceremonials. Such significance will be understood when the ceremonial is examined later.

It would be of interest to notice that the kiva in Zuni, unlike that of Taos and other pueblo villages where the kiva was round in shape, was shaped rectangularly, just like other house units in the village. But the meaning of these two kinds of house was different because they accommodated different contents. The ground floor of a house unit was also accessed through the roof entrance by a ladder used in kiva.

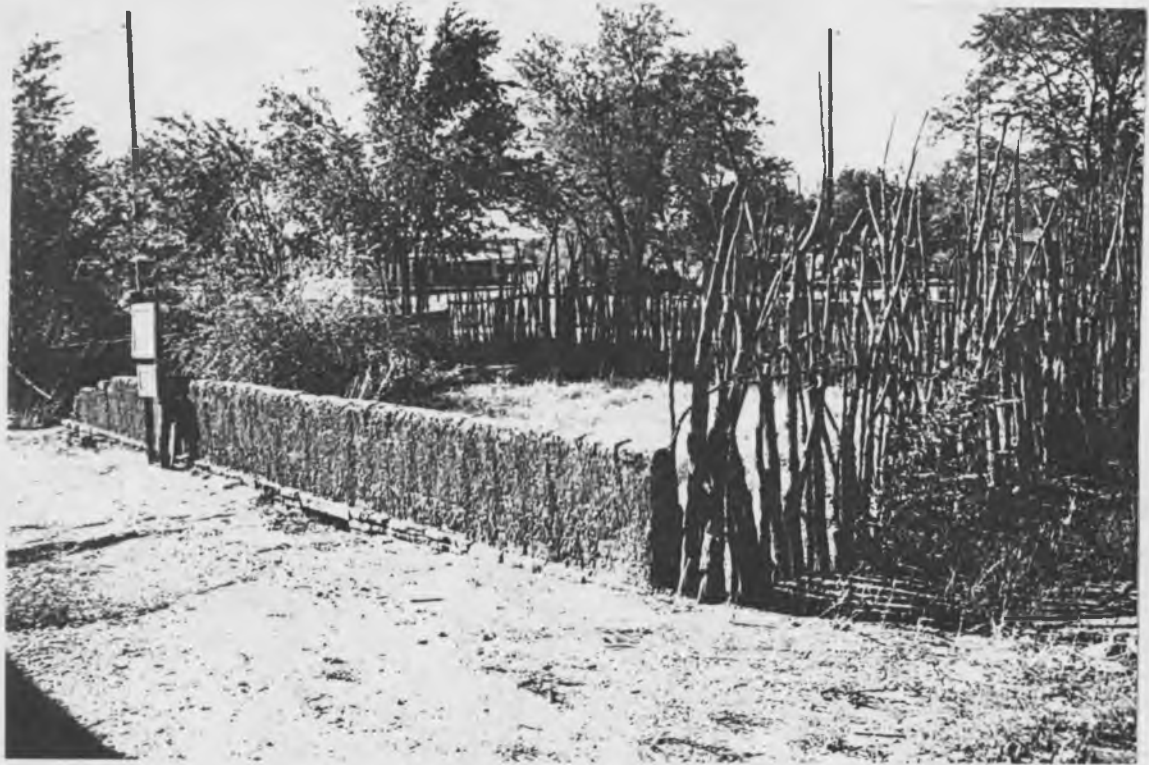


Fig.19. Zuni myth: the Middle Place.

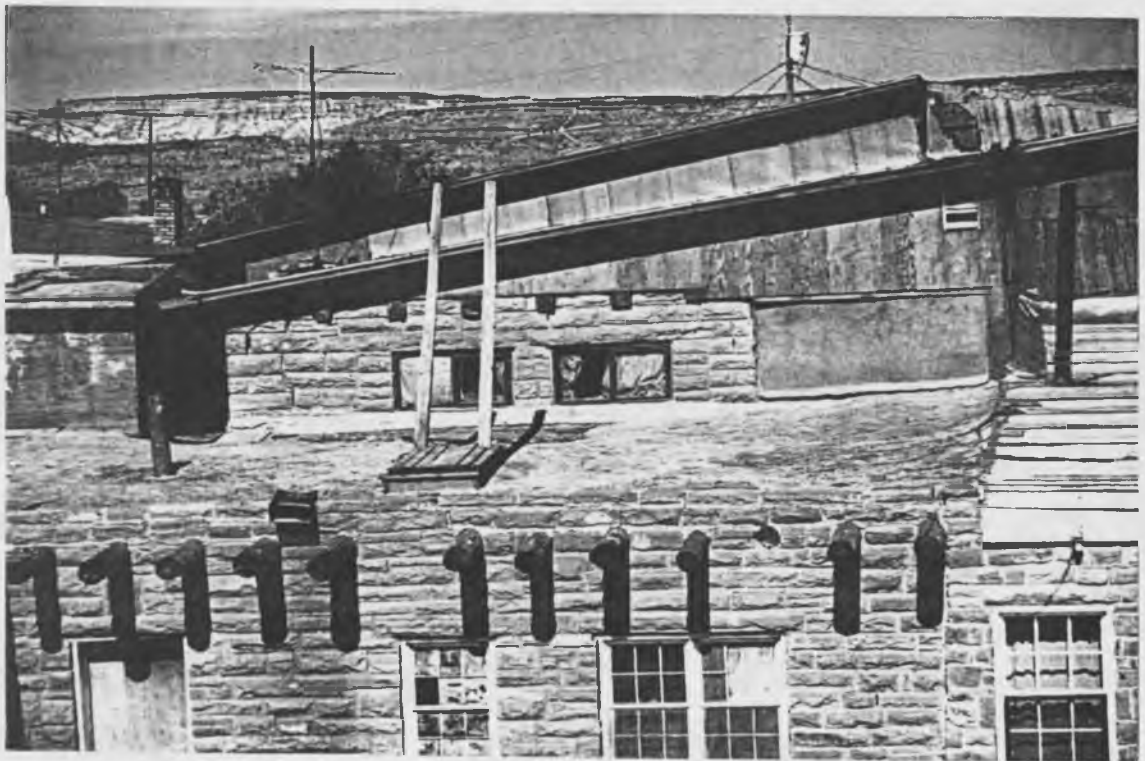


Fig.20 Zuni's kiva.

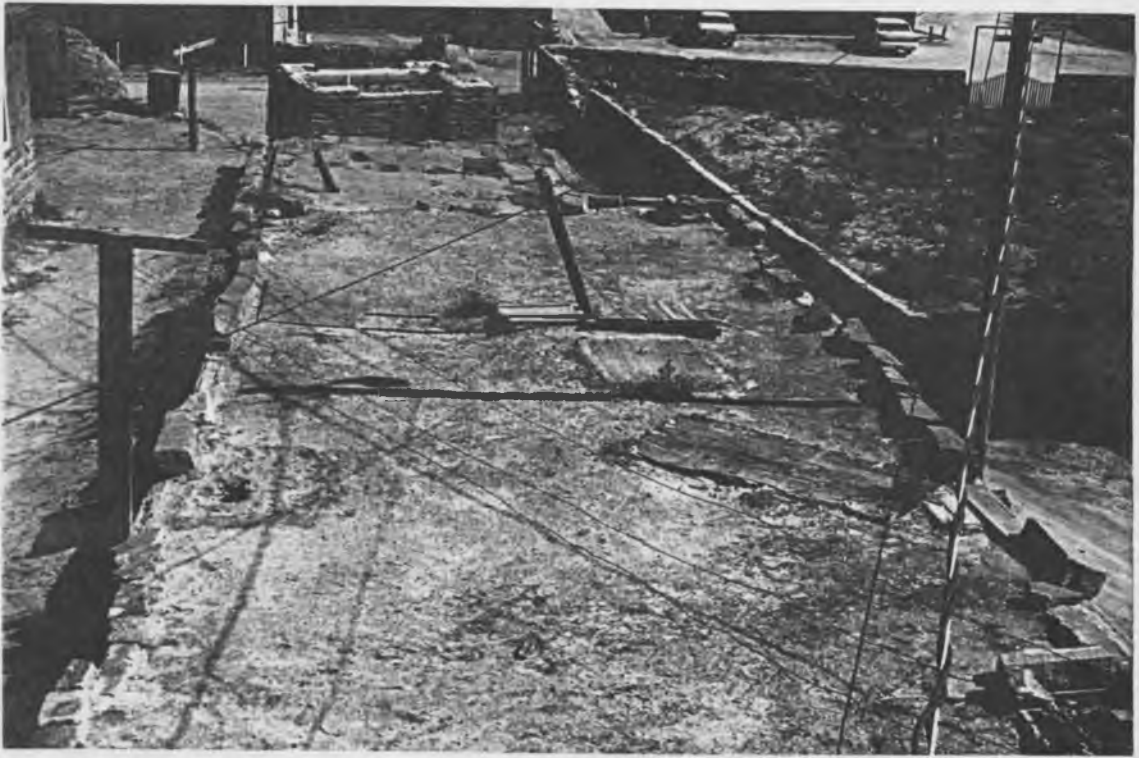


Fig.21 Zuni's kiva.

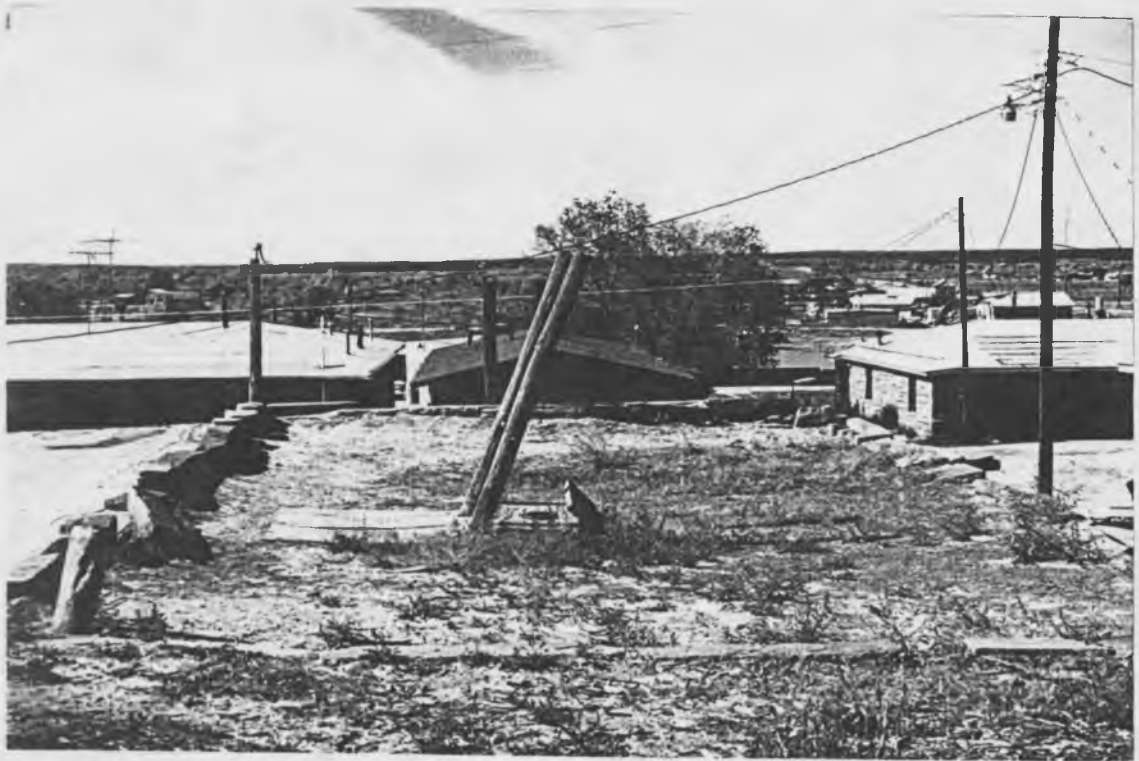


Fig.22 Zuni's kiva.

This not only led people to participate in the ceremonials but also had a symbolic implication of ascent of the Zuni ancestor. This meaning became clear when many of other rooms at ground floor had external doors added while the kiva remained unchanged. This symbolic meaning of the kiva was also supported by fact that the floor of the kiva was lower than ground level.

As mentioned earlier the ancestors of Zuni were regarded ascending from the fourth womb. The figure "four" thus had distinct position in cultural design especially in ceremonials. The cardinal directions were four; the numbers of plazas in the village were four; among twelve Rain Priests four were more sacred than other grandest ceremonial, shalako, was a four-day ceremonial although the preparation took much longer; and the four was also the basic measure for the performance of other ceremonials.

The kivas and plazas formed public settings for accommodating ceremonials and other activities. When at the ceremonial times, the kivas and plazas became the sacred stages for the dramatic performances, which will be discussed later when the relationship between the built form and ceremonials is examined.

Besides the kivas and plaza which form settings for public life, the terraces were also an important activity setting accommodating both public life and domestic life. The roofs and floors structures were the same so that there was no distinction in method of construction. Such a system easily admitted additions to the house units.

Household activities took place on the terraces. Meats, vegetables, and grains were laid to dry; the cooking was mainly done on the terraces, usually at the end of the first terrace; in the summer the women were very busy on the terraces, husking great heaps of corn; children played on the terraces (Fig.23) while the old men liked to sit on the terraces to sun themselves; the edge of the roof was sometimes used as a working place for decorating native pottery; and the top terrace was a good place for the governor or the priests to summon or announce some public issues.

The terraces also functioned as a background and bleachers for the visual participation of the ceremonials (Fig. 24). There was a vivid description of such a situation by Cushing when he first entered the Zuni village in 1879:

At last, gaining my wished- for position on the edge of the terrace, I came face to face with nearly the whole population of Zuni. ... all over the upper terraces were young men in groups and pairs, ... women and girls, ... were standing and sitting on the lower terraces, or in one side of the court below. The older ones were holding their children and talking to them; the younger, intently watching for the dance, or slyly glancing from under their banged hair, ... Old, gray- headed men, sat or squatted around, or leaned on their crooked stocks. Innumerable children , ... were chasing one another about the terraces, wrestling, screeching, or pelting any stray dog that

came around, while a few imitated the older people by sitting silent expectation (Cushing, 1882).

While the plaza, kiva, and terrace formed public settings, the dwelling was private domain to accommodate the household activities. Usually a dwelling had four to six rooms and the larger one for habitation could accommodate the majority of the family activities.

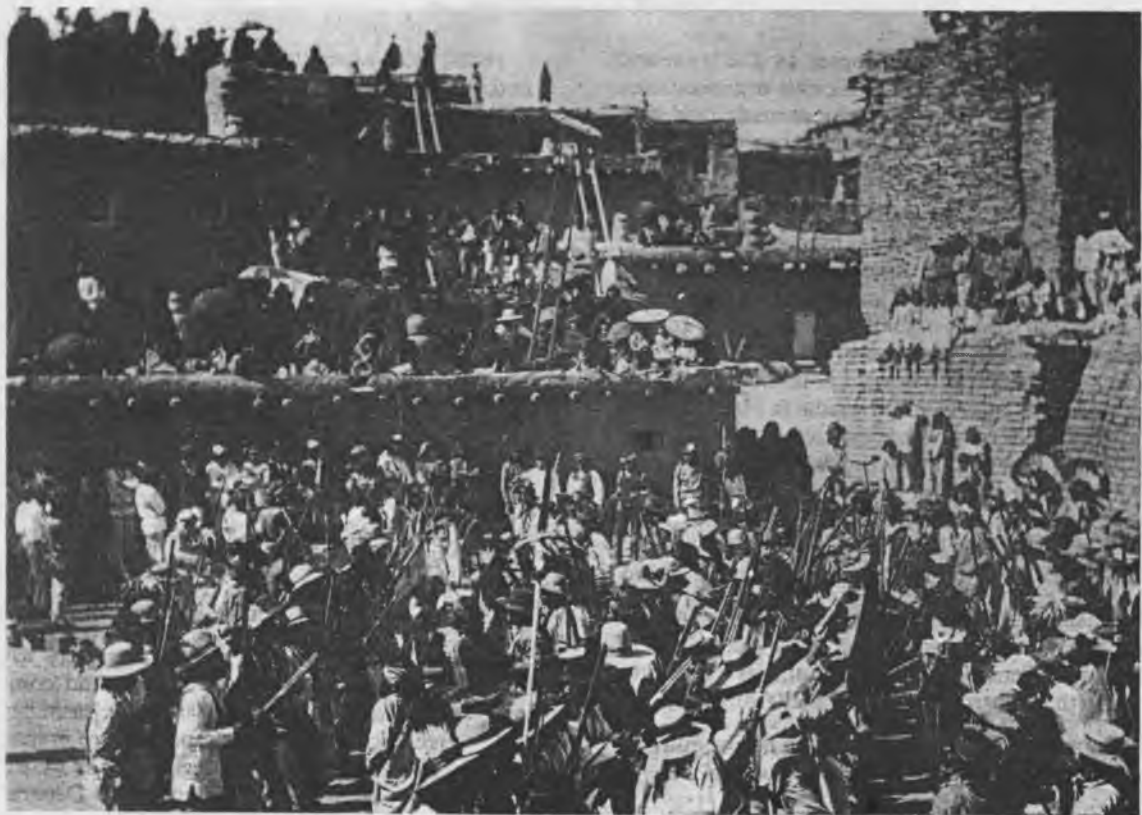
Figure 25,26 shows a typical Zuni interior. The pole, with its two ends embedded in the wall, was used for hanging or suspending household items, such as blankets. The deer horns were built into the wall for the same purpose. The floor was paved with regular slabs.

In Fig.25, the room was furnished with raised benches of masonry along the sides, a common feature in the Zuni house. Usually such benches extended along the whole length of a wall, but there it ended on one side because of the fireplace and chimney. On the left the bench terminated near the mealing stones which was the floor space for women who ground grains. The metates, identical components of dwelling for grinding corn, were arranged three in a row. The sill of the doorway for the floor with a mortised door in a single panel.

Alongside was a small hole through which the occupants could prop the door inside the communicating room so that brought the communication under control. The interior communication seemed to exist in practically all cases of adjacent houses. The sealing of the hand-hole with mud prevented the room from being intruded. This room was adjacent to the other wall evidenced by the fact that the



Fig.23 Bread oven in Zuni.



**Fig.24 A Zuni war-victory dance. As photographed
by Timothy O'sullivan in 1873.**



Fig.25 Zuni: Interior of Zuni pueblo. Photo by Adam Clark Vroman about 1900.



Fig.26 Zuni: Interior of Zuni pueblo. Photo by Ben Wittick.

windows have become niches in the wall used for the place of small odds and ends of the Zuni household. The shape of chimney was the most common type in Zuni at that time. It was centered on the midway of the long wall of the room. The fireplace was used for light cooking as well as for warming the dwelling.

Such a room functioned as living room, dining room, and bedroom according to different times of day. The design of this kind of room responded to the Zuni's daily life and accommodated the people's distinct behavior pattern. The meals were eaten directly from the stone-paved floor; people usually sat on the floor or on the blanket. People could sit for hours in a peculiar squatting position without any discomfort. At night the floor was a bed.

Sometimes a habitation room was also used for a clan meeting or a ceremonial. This may be due to the simplicity of the room furnishings. Such simplicity facilitated the change of function without change of place. The room chosen for the ceremonial observance should extend east and west to make the alter face the east so that it would be struck by the first light of day when the sunlight came through a window at the east end of the room.

During ceremonies the owners of the house moved out temporarily. Then the room was thoroughly cleaned and was often re plastered and decorated with motifs for the ceremonial. Here the meaning of the house was changed through the redesign of the surface of the wall. Figure 14 was one of the examples. This room was decorated with

symbols of the Macaw clan. The tablet hanging from the ceiling beam was a prayer offering placed there at the end of the ceremony and was left in position throughout the year until it was replaced following another ceremony room.

The Above discussions are about the cultural influences on the built form in Zuni. Next we can look at some aspects of built forms in Taos in terms of their cultural influences.

In Taos Pueblo cultural values also influenced physical features and some of them were similar to those in Zuni Pueblo. Two building types existed: the kivas as ceremonial structures and the houses for household activities; the central open space and terraces formed public domain mainly for the ceremonials (Fig. 27,28); the simple room in terms of furnishing accommodated the majority of family activities. There were, however, some differences in terms of spatial organization and the distribution and treatment of the kiva.

The settlements were spaced on the two banks of Taos River (Fig.29), north clusters and south clusters. The six kivas (the seventh was unused) were evenly distributed with three on each side. Such an arrangement could be seen as the result of deliberate design connected with the moiety organization that is two parts, divided by Taos River, constituted the whole settlement. Correspondingly the kiva organization was also divided into two categories: north-and south-side kiva groups. In addition the village-wide ceremonials were alternatively charged by the two kiva groups.



Fig.27. Taos: On the day of a Comanche dance.

Photo by H. F. Robinson.



**Fig.28 Taos: Pole climb
on San Geronimo's
day, 1910.**

Photo by H. F.
Robinson.

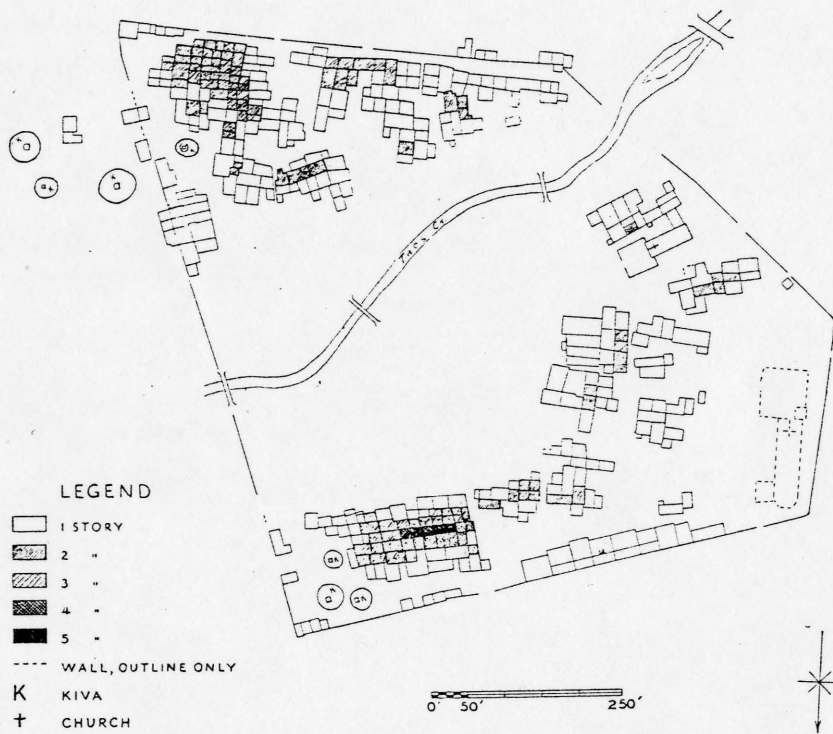


Fig.29 Taos site plan of 1950.

Collections in the Museum of New Mexico.

The building layouts on the two banks looked different. On the north side the arrangement of building blocks seemed fragmentary with the main cluster at the northeastern corner with three round kivas located just inside the wall. On the south bank, there seemed to be a closer relation of each building blocks. The kivas, in contrast to those on the north side and with one exception, were outside of the wall(Fig.30, 31).

Here the function of the open space was the same as the plazas in Zuni although the spatial sense was different. The open space in Taos could be seen as one large plaza containing certain spots as the places for performance while in Zuni each plaza served as one of the places for ceremonials.

In Taos the kivas' relation to other building blocks was different from that in Zuni where the kivas were respectively bounded with different building blocks. The kivas in Taos seemed given special attention to be differentiate them from other housing units thus physically expressing the significance of the ceremonial structures. These kivas were detached structures, with three clustering together to form north-and south-side religious centers. The kivas were subterranean or semi- subterranean and the ladders of these kivas were visually striking, projecting from ten to fifteen feet beyond the hatch, accentuating the significance of the ceremonial structures to symbolize the ascent of Taos people from the bottom of a sacred lake. The kivas inside the wall and those outside the wall were treated differently probably because of the cultural definition of sacred inside



Fig 30 Taos: Kivas on the North side.



Fig.31: Kiva on the South side.

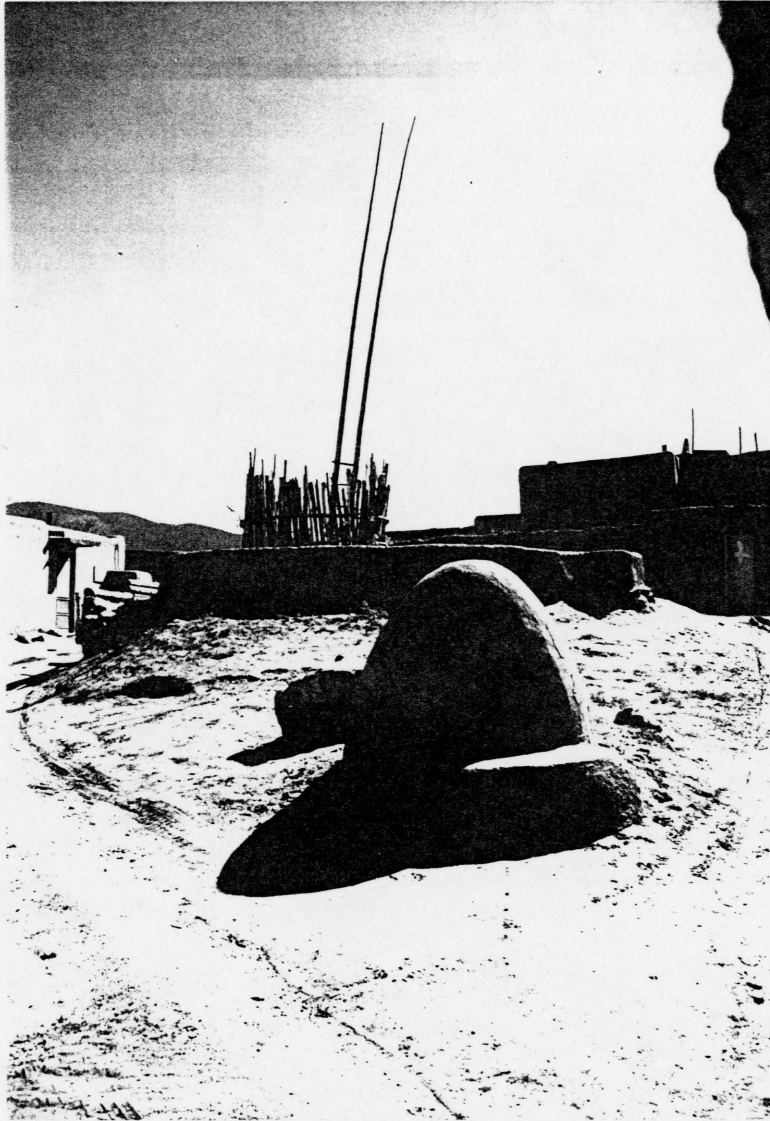


Fig. 32 Taos: Kiva on the South side.

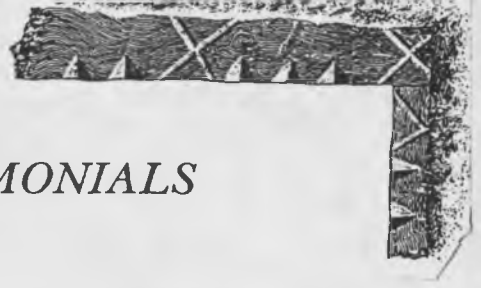
and secular outside although the kivas outside the wall were also sacred domains. Inside the wall four kivas, three on the north side and one on the south side, were round in shape with a circular palisade of wood about seven or eight feet high around their respective hatchways; on the south side outside the wall the kiva's hatchways were surrounded with square adobe walls two feet high (Fig. 32).

The significance of the kiva and central open space were for accommodating the ceremonial either village-wide or group-wide. The ceremonials in these two pueblos were precious cultural products which, on the one hand, cyclically reinforced cultural ties and on the other hand demonstrated the significance of the built environment.



CHAPTER THREE

BUILT FORM AND CEREMONIALS



Perhaps the ceremonials in these two pueblos were sophisticated cultural components which deeply demonstrated and reinforced people's beliefs of their origin and their relation to nature. These beliefs having taking the form of mythical explanations were indeed a precious heritage which to a great extent defined the cultural identity. Here the cultural identity could be seen as a unique set of characteristics exclusive to a group of people sharing values in an intensive way. These characteristics were both physically manifested in artifacts and spaces and manifested as concepts in people's minds. And the concepts were intensively expressed in the ceremonials.

In some sense, religion as a deep understanding and interpretation of life experience was the occupants' subjective response both in a pragmatic and in a mythical way to the given environment and the opportunity it offered. It seemed that the physical form influenced ceremonials in two ways. One was that it provided a context on which the themes of the ceremonials were developed and elaborated. Another was that when the ceremonials were taking place, the physical form served as a sacred stage for the dramatic expressions of cultural feelings, desires, and expectations (Fig.33,34,35,36).

The causality between natural conditions and the subsistence agriculture to certain extent defined the purposes of the ceremonials. In Zuni, for example, the purpose of the religious observances were

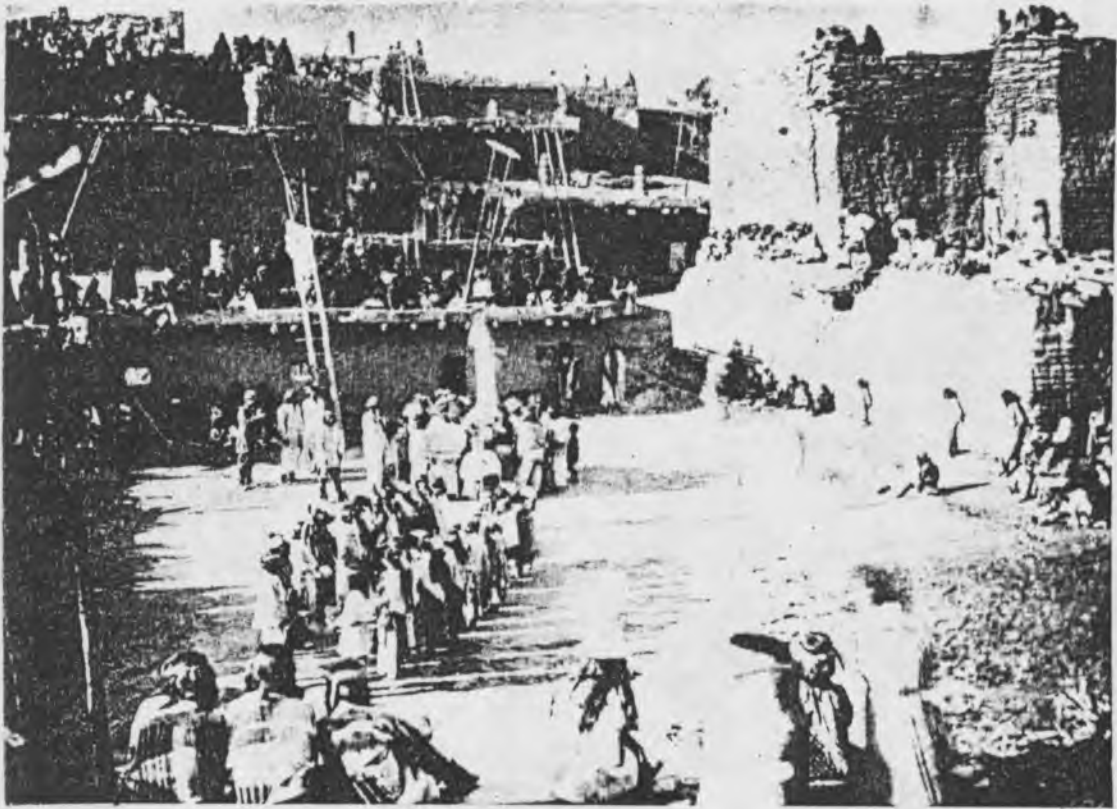


Fig.33 Zuni: Dance in the plaza behind the church 1910.

Collections in the Museum of New Mexico.

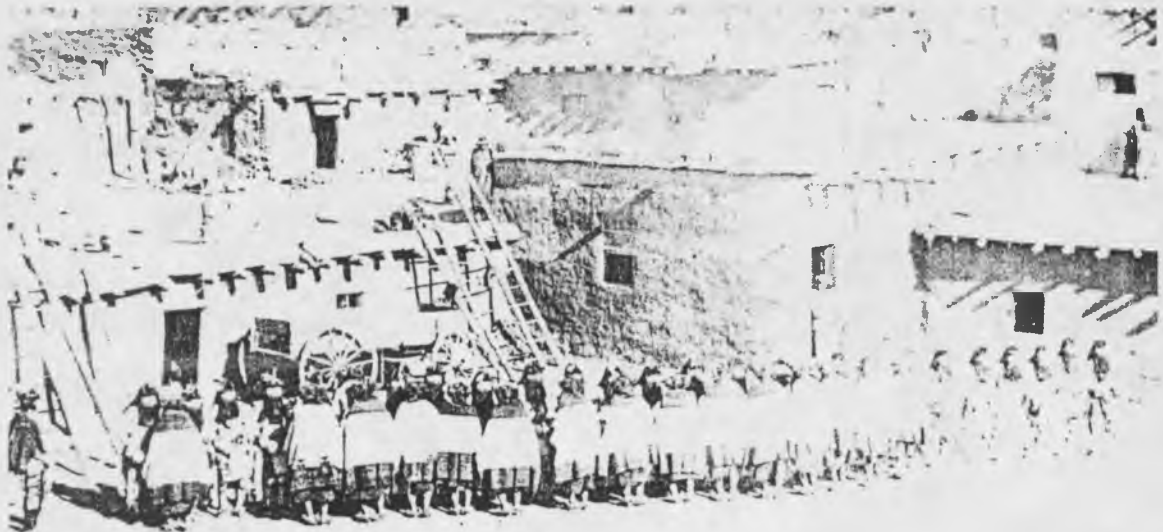


Fig.34 Zuni long-haired Kachiac dance. Photo by Wittick.



Fig.35 Taos:
Dance under the
North Building.
Photo by Wittick.

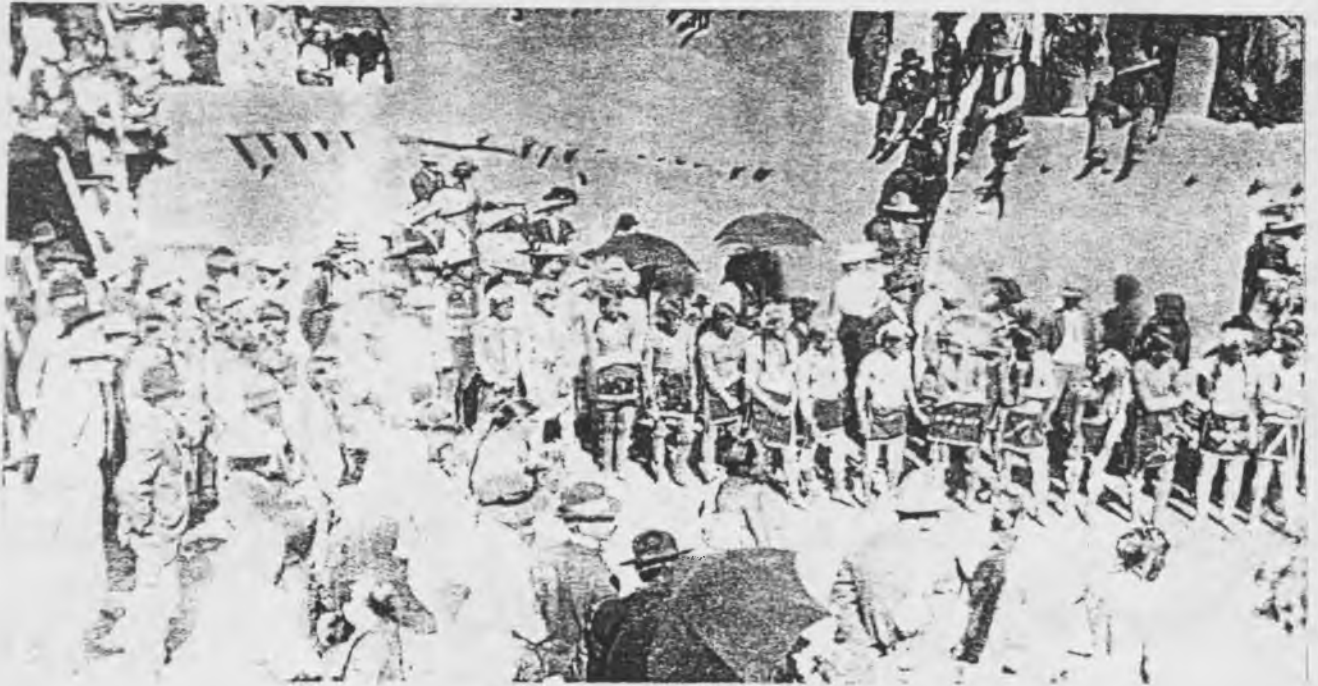


Fig 36 Taos: San Geronomo's day race under the North Building, 1910.
Collections in the Museum of New York.

mainly for the weather control, crop fertility, and human fecundity. This was due to the fact that the natural environment did not always bring enough water for the growth of the crops so that the water became an essential element people prayed for through the exacting ceremonials, the activities of great formalism, precision, and compulsion. The water was given such emphasis that it seemed that the meaningful environment should be a water-filled environment. " To 'bless with water' is the synonym of all blessing. Thus, in the prayers, the fixed epithet the gods apply in blessing to the room in Zuni to which they come, is ' water-filled, their ladders are ' water ladders', and the scalp taken in warfare is 'the water filled covering.' The dead, too, come back in the rain clouds, bringing the universal blessing." (Benedict, 1934, P. 64). The following summons for rain by Zuni priests would illustrate the significance of the water.

"Form wherever you abide permanently,
You will make your roads come forth.
Your little wind blown clouds,
Your thin wisp of clouds replete with living waters,
You will send forth to stay with us.
Your fine rain caressing the earth,
Here at Itiwana, [middle place]
The abiding place of our fathers, our mothers,
The ones who first had being, with your great pile of
waters,
You will come together.' (Benedict, 1935, P. 64).

Certain physical structures, elements, and objects were designed for the ceremonial purposes to serve as symbolic linkages or visual stimuli for evoking the concepts in people's minds, such as stone shrines. There were a number of sacred shrines for the ceremonial purposes. The design, as mentioned before, was also involving the imposition of meaning on the physical elements, such as springs, lakes, and mountains. The Blue Lake in Taos Mountains was one of the typical examples of such design (Fig. 37). The Blue lake was the most sacred shrine on the land of Taos Pueblo because of the significant connection with the emergence myth of the people. Interestingly enough, the Blue Lake in the Taos Mountains was adopted as the symbolic substitute of the original shrine - the Colorado Blue Lake where Taos people were supposed to come from. Each year from the last week of August all adults in Taos pueblo went by horse or on foot to the Blue Lake area for the ceremonials. There were offerings of prayer-feathers and pollen. Initiates of the kiva group bathed ceremonially in the lake for the purification. The ceremonial might be also involved with the Katchina - rain - fertility cult common to all the pueblos. Some of the young people ascended Taos Peak for a sunrise ritual. The sacred area became a precious cultural stage for the performance of ceremonials which reinforced cultural heritage. The Blue Lake ceremonial concluded on October 2 or 3.

In both pueblos, when ceremonials took place, the built environment could be seen as sacred dynamic stages whose spatial sequences were according to the nature and order of the ceremonials. Sometimes the stages were outside the villages, in mountains, at the sides of lakes and



Fig.37 Taos: Blue Lake.

so on. Sometimes ceremonials took place inside the villages either in the plazas or inside the kivas or the combinations of the two. The grand ceremonials could be considered as pageants which took place both inside and outside the villages and natural phenomena like sunrise and sunset also became parts of the ceremonials. The performances were rich and colorful involving dancing, signing, chanting and the techniques were many, as Bunzel pointed out:" Practically all the techniques employed by primitive or civilized man to influence the supernatural are known at Zuni - fetishism, imitative magic, incantations, and formulae figure largely in ritual." (Bunzel 1929- 30a: 489)

Next we look at the grandest ceremonial in Zuni, Shalako, to understand the significance of the ceremonial and its relation to the built environment. The ceremonial was well organized both in terms of spatial sequences, the procedures, and the themes. It is analogous to think of the ceremonial as a several acts dance drama. Although the stages for the ceremonial were dynamic with the natural environment as background, the relation of performers to the spectators were much more intimate in the ceremonials. Let us watch the ceremonial (Fig.38,39,40,41,42,43).

PROLOGUE

Off screen voice:

This was a four-days ceremony for welcoming the Messenger of the God, Shalako, to return to the Zuni village. Participants were all

cultural members either as actors or as spectators. New houses in the village were ready for the return of the Shalako. Prayer sticks were ready inside the doorway threshold. All kinds of seeds and colored grains of corn were put in a central hole in the floor for the dedication of the God and for the crop fertility and human fecundity. [The seed and grains had sacred meaning because of the cultural schedule and sacred place].

Time; The winter of 1880

First night: Great fires blazed on the southwestern hills.

It symbolized the beginning of the ceremonial. [Southwestern to the village was the ancestors' settlements of long time ago, the direction Shalako would come from. Fires had a symbolic connection with the south in Zuni orientation system.]

Next day: In the village.

The neighbors, Navajos and Indians of the Rio Grande were invited for the visual participation of the ceremonial. Oxen and sheep were slaughtered much more than other times for the sacred foods. Men sewed garments inside the houses. women ground corn, cooking paper-bread, cutting meat for the ceremonial.

Evening:

All spectators gathered over the southern terraces. [Terrace at this moment became the

bleachers for the visual participation as well as for enculturation.]

ACT ONE EMERGENCE

The evening : Over the plain.

There appeared seven gigantic impersonates with black head and white forms. Crowds of attendants accompanied them. The procession gradually came towards the village. They stopped in the midway to perform ceremonial.

ACT TWO WELCOME

At the same time:

Eight costumed figures marched towards the village. They crossed the river to the west of pueblo. The leader was a priest who carried a tray of sacred plumes. [Plumes was regarded possessing the magic power to bring the goodness to the pueblo]. The eight figures also carried painted plumed sticks. Two red bodied characters followed with painted sticks and plumed sticks. They were guarded by other two red-masked nude figures [They probably represented the Fire-God who helped the Zuni people up to the surface of the earth from the underground].

The western plaza.

The whole party danced four times and four principle characters placed sacrifices of plumed

sticks. [The figure 'four' might connect with the fourth womb underground and the four cardinal directions]. The same things were redone in other three plazas. The performance ended exactly at the sunset. [Natural phenomenon as cultural clock for the sequential arrangement of the ceremonial]. The performance went into the sacred room at southern side of the village.

ACT THREE RETURN

At the dusk: On the plain.

Gigantic figures being left crossed the river. They were costumed like mythical birds Each mythical birdlike figure was guarded by two priests down to the new house through the ladder after prayers. The rooms closely curtained for the exclusive sacredness. [Priests in Zuni were the powerful persons who were regarded possessing the magical power].

ACT FOUR CELEBRATION

Inside each new house. Toward the midnight :

Dancers were along northern side. Two priests engaged in prayer, chant, or ritual. At the end of the prayers bowls of meat, trays of paper-bread, and baskets of melons were placed in rows.

After the feast:

With the reverberating sounds of drum pairs of dancers alternatively danced in a pattern until exhausted for the expression of welcoming the

Shalako who, by the altar, at the end of each verse of the chant started up, clapping its long beaks and rolling its protruding eyes.

Next morning: The star was rising. The music ceased.

Silent atmosphere.

In the center of the room chief dancer costumed elaborately. The Priest of the Sun led him up through the ladder to the roof [Probably as symbolic representation of the ascent of the Zunis]. They faced the east. The priest pronounced, the spectators gather around the altar and prayed. In the sounds of prayer, the sun rose. They went to their respective homes.

EPILOGUE

Outside the village.

The southwestern plain. The dancers left the village and crossed over the river. The Shalako, with the accompaniment of the music on the flutes, went to snow-covered plain. Over the plain all the priests ran back and forth over a Great square [Probably the shrine where Shalako deposited prayer plumes]. They planted plumed sticks at either end of the square as dedication for their Gods. Then in a procession they gradually went away and disappeared among the southern hills where was the place to begin the ceremonial.

END.

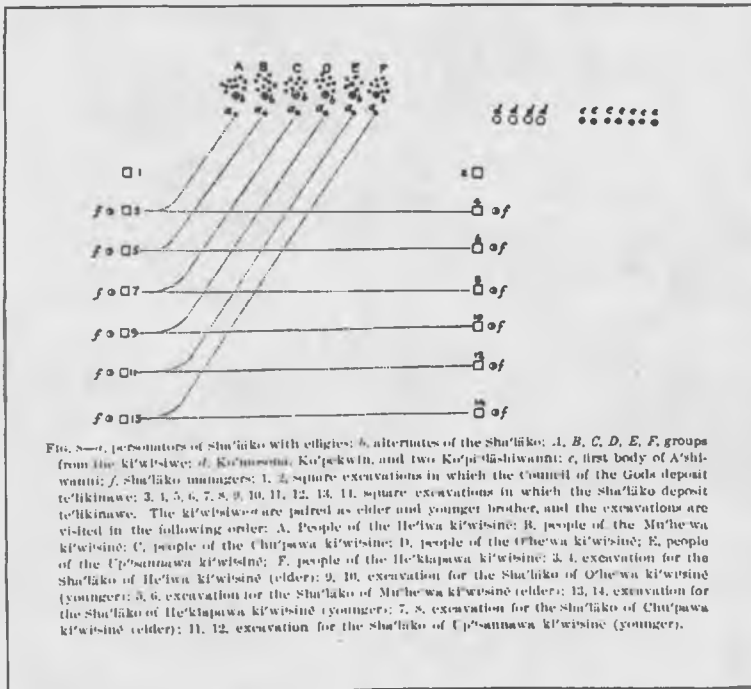


Fig. 38 Zuni: Shalako race.
The Shalako then race
back to their starting
point so that the pattern
interweaves.
 Drawn by Stevenson.



Fig. 39 Zuni: The Shalako and their attendants, 1896.
 Photo by Ben Wittick.



Fig. 40 Zuni: Waiting for the Shalako to recross the river for the final race, 1896. Photo by Ben Wittick.



Fig. 41 Zuni: the Shalako crossing, 1896. Photo by Ben Wittick.



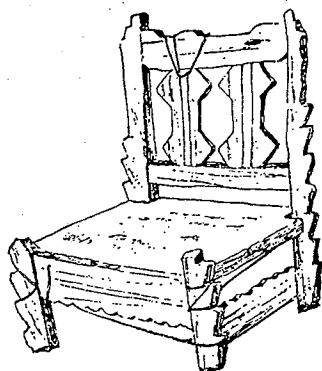
Fig. 42 Zuni: The Shalako are racing. Photo by Ben Wittick.



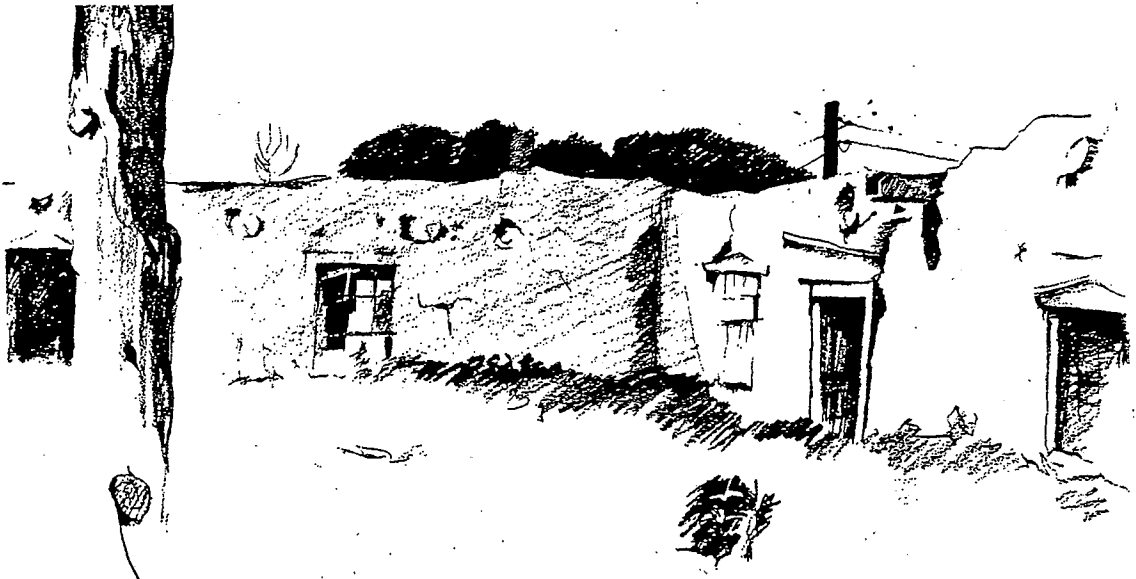
Fig.43 Zuni: The final race. One Shalako is just approaching his attendant, another has just dropped his offering and his attendant is covering it up; Another is down staring his attendant in the face.

Photo by Ben Wittick.

So far in this part the meaning of the physical form in two pueblos in the late nineteenth century was examined by looking at the influences of their natural environment, surrounding social situation, and cultural values. In the next part, the meaning of the built form will be examined in a dynamic situation, that is the continuum of change and continuity both in terms of culture and built form.



Part Two
Change, Continuity,
Identity, and Meaning



CHAPTER FOUR

CHANGES AND THEIR DIMENSIONS



From the above discussions it should be pointed out that the meaning of the built environment in these two pueblos was nearly exclusive to their own culture because they were to a great extent self-contained and isolated communities even after contact with Spanish culture more than three hundred years since the middle of the sixteen century. The physical environment and the meaning of it was fundamentally native and the unique architectural form remained unchanged. This might be due to the fact that the exclusive cultural values were strongly shared by all cultural members and that the cultural knowledge was elaborated and handed down from generation to generation.

The meaning of the built form, however, seems more complicated if viewed from a dynamic situation, particularly, in the context of constant contacts with foreign cultures. These contacts with alien cultural values has caused reorientation of the native cultural value system to adjust and adapt the changing situation. Such reorientation is of course more or less involving the changes in the physical environment and the meaning of it.

Interestingly enough today there is a striking difference between the Zuni Pueblo and Taos Pueblo in terms of physical environment and the meaning underlying it. In Zuni the physical environment seems modernized having lost a majority of its native architectural

characteristics while in Taos village, defined by the wall, the native architecture has remained unchanged. Let us begin with the Zuni Pueblo to look at the changes in physical form and in culture.

It will be helpful to first obtain a general picture of the large environment of the modern village when approached from Gallup. Along the road leading to the village, the telephone and electric wires are strung; houses are constructed of concrete blocks with gabled roofs and there are also some mobile houses; and several trading posts, a post office, and a snack bar can also be seen (Fig. 44,45,46,47)

The village is modernized but it is still on the site where once terraced buildings were built. The visual qualities of the architecture are significantly different from that of the late nineteenth century. The noticeable multi-storied terraces with striking ladders, once as the principal physical features of native architecture, have almost disappeared. Instead the original compactness of contiguous housing units have been replaced by either the detached single family houses with specialized rooms or groups of such houses. As a result the village seems more spread apart. Some places either in front of or at back of the houses function as parking lots and the autos are everywhere since, by 1955, almost every family head owned one automobile. The electrical poles and television antennae suggest the aspects of the modern life of the village. In the 1970s away from the old village there have developed modern single-family houses including paved streets, streetlights, sidewalks, grassy lawns, central heating, gas and electricity, and completely equipped kitchens.



Fig.44 Zuni: Village today.



Fig.45 Zuni: Village today.



Fig.46 Zuni: Village today.



Fig.47 Zuni: Village today.

Although wood and stone are still building materials, they are not as organic as those in the old times when they were processed by hand. The stones are quarried from the nearby mesas, cut to a hard symmetry and mortared with cement. The roof beams projecting from the external walls are milled lumber with rectangular section which is scientifically reasonable and different from the round log in the past. The window frame and glass are industrial products for admitting sufficient natural light (Fig.48,49,50).

The single family houses have been patterned from American suburban houses to accommodate changed behavior pattern. The interior walls are finished with hard plaster or board paneling. Such houses usually have three or more rooms which are specialized as living room, bedroom, bathroom, work room, and kitchen with piped water. Refrigerators and pantries replace the original rooms on the ground floor or back rooms where melons were stored and ears of corn stacked. Metates, the element in the old times as equipment for grinding corn, is gone (Fig.51,52,53).

The two photographs (Fig.54,55) may illustrate some changes of interior design as well as some behavior pattern in terms of modern influences. In Fig. 54,55 the floor is covered with tiles, not the regular slabs of the old times. The ceiling is flat and covers the roof structure, which is unlike the house of the past in which the beams were visible. At the corner stands a fireplace which is used for warming the dwelling but it is made of brick which is different from the fireplace of adobe at the early time. Obviously the window frame,

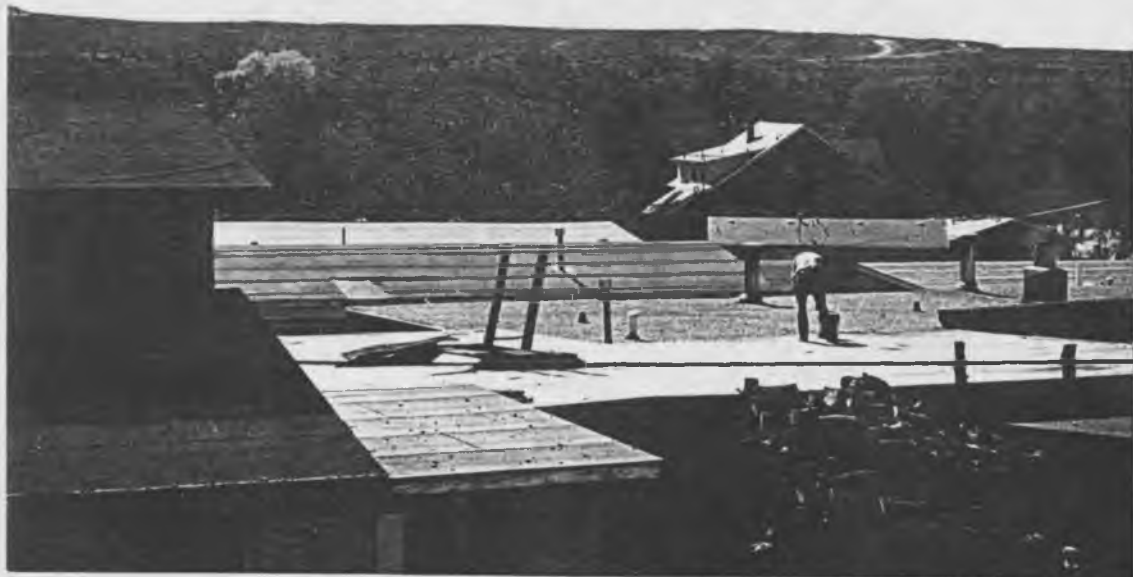


Fig.48 Zuni: Looking across the rooftops of Zuni.



Fig.49 Zuni: Old and new in the heart of Zuni pueblo.



Fig.50 Zuni: Pueblo center of modern Zuni and ceremonial plaza of old Zuni.



Fig.51 Zuni: Living room of a Zuni family.



Fig.52 Zuni: A hall of a Zuni family.



Fig.53 Zuni: A kitchen interior of Zuni family.



Fig.54 Zuni: A living room interior of a Zuni family.



Fig. 55 Zuni: A living room interior of a Zuni family.

the glass, and the curtain are the products of modern world. Modern furniture is conspicuous in the room when compared with the Fig.25,26 which shows a few pieces of native furniture. Couch, chair, table or even the household utensils on the table are modern furnishings. Instead of sitting directly on the floor or on the blankets or small stools, people today sit either on the sofa or chair. Telephone, radio and television in the photo reflect the aspects of modern life.

Corresponding to the changes in socio-cultural context and the spatial organization, there are some changes in the behavior pattern. The hunting and collecting which were the necessary supplements of the agriculture have ceased to be major economic activities. Consequently, today, the activities like the weaving, basket making, pottery making in the nineteenth century when the Zuni was a self-sufficient community, have disappeared.

***“ Weekend shopping at the supermarket now takes the place of busy activities and the annual harvest time.”
(Dozier, 1970, P. 12).***

“ Many domestic activities which formerly took place outside on the terraces such as drying and preparation of food, were moved indoors... Although a few domestic activities such as bread baking still take place outdoors, exterior space has come to be used primarily

for either access or ceremonial activity" (Ferguson and Mills, 1978, Cited by Saile, 1982, PP. 7-8).

" Today Zuni listen to radios, attend movies, send young men to the military services, and educate their children in modern school" (Roberts, 1961, P. 308) .

" Cooperative attitudes have been modified in the last twenty-five years, this is evident in the homes, where there is a rivalry between certain families in purchasing modern furnishings, appliances, and automobiles. Property now brings prestige and is a motivating force behind wage work. The things money can buy have important symbolic value in this prestige system" (Leighton and Adair, 1966, P. 37) .

The changing situation has also influenced some native religious activities:

Stick-swallowers perform at very infrequent intervals: ceremonies such as the Scalp Dance likewise occur only at long intervals; it is difficult to get participation of the younger women in the dance for the Santo; kick-stick races were not held in 1947; the communal rabbit hunts are less frequent. (Leighton and Adair, 1966, P. 52).

These changes in built form and behavior pattern could be to a great extent regarded as physical manifestations of changes in native culture since Zuni culture today is significantly different from that in the late nineteenth century. Perhaps the most important change is that the original self-contained community has become dependent upon outside markets. Many people are more dependent on earning money through silver work and wage labor than they are on agriculture or stock raising. "The Zunis, since World War II, have become dependent upon a modern cash economy for their needs. Most household have some means of high speed transportation, mainly pick up trucks, that provide a ready access to all the modern trading centers in New Mexico." (Ladd, 1979, P. 492). It seems obvious that the shift has strongly influenced some attitudes and behavior patterns that are more or less reflected in the changes of built form, as discussed above.

Although the changes in built form are considerable, the process of its transformation seems gradual. It would be very helpful to understand the pace of such gradual transformation by looking at a series of village layouts of different times and a series of corresponding photographs (Fig.56,57,58,59) .

The village layouts of different times have mainly recorded horizontal development of building organization, that is the changes of the relations among the building blocks. The trends towards the creation of more open space, small building blocks, and large houses seem clear. It should be pointed out here that such changing process also

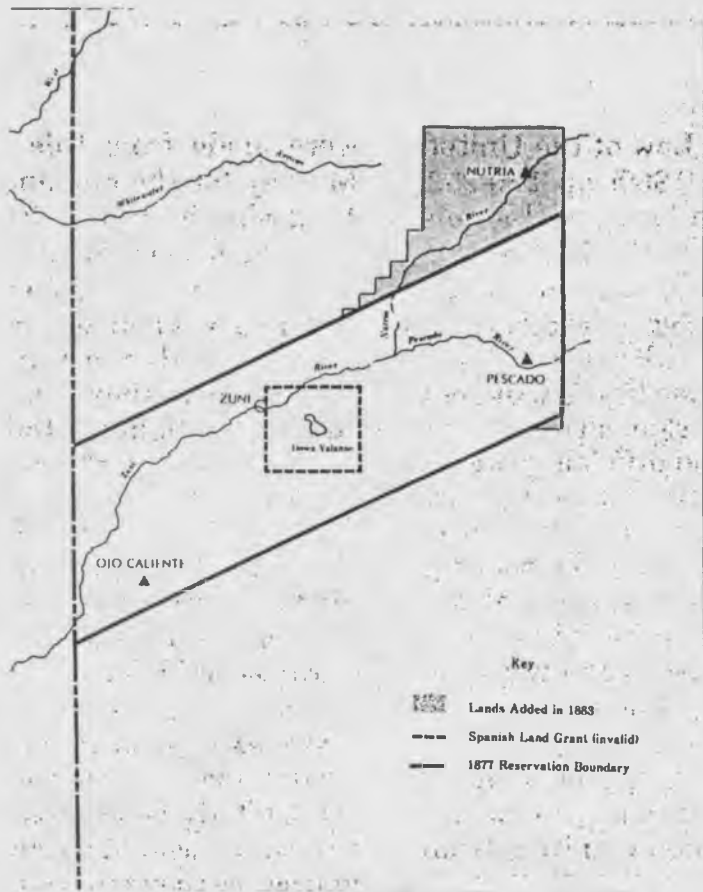


Fig.56 Zuni: Zuni land change: 1877-1900.
 Drawn by S. Lyman Tyler.

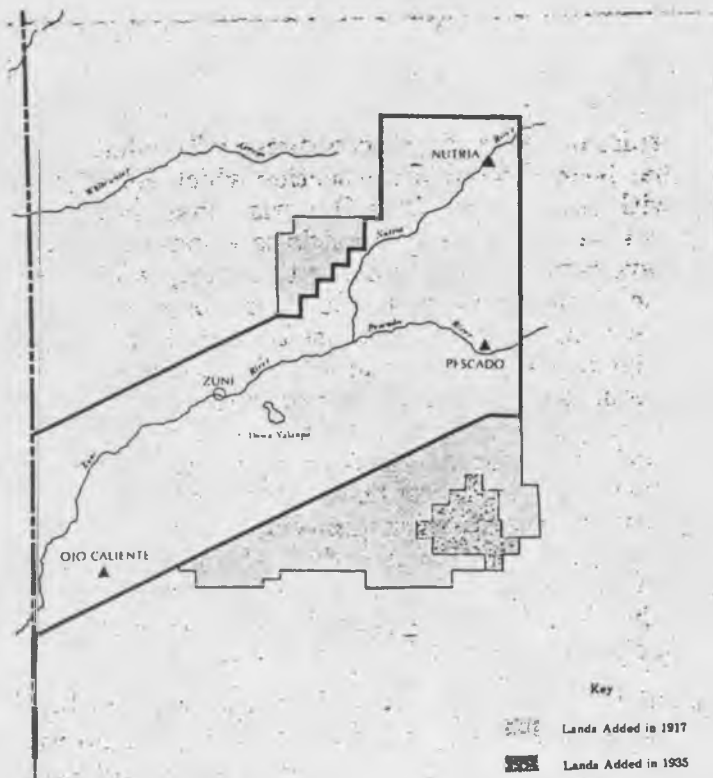


Fig.57 Zuni: Zuni land change: 1900-1949.
 Drawn by S. Lyman Tyler.

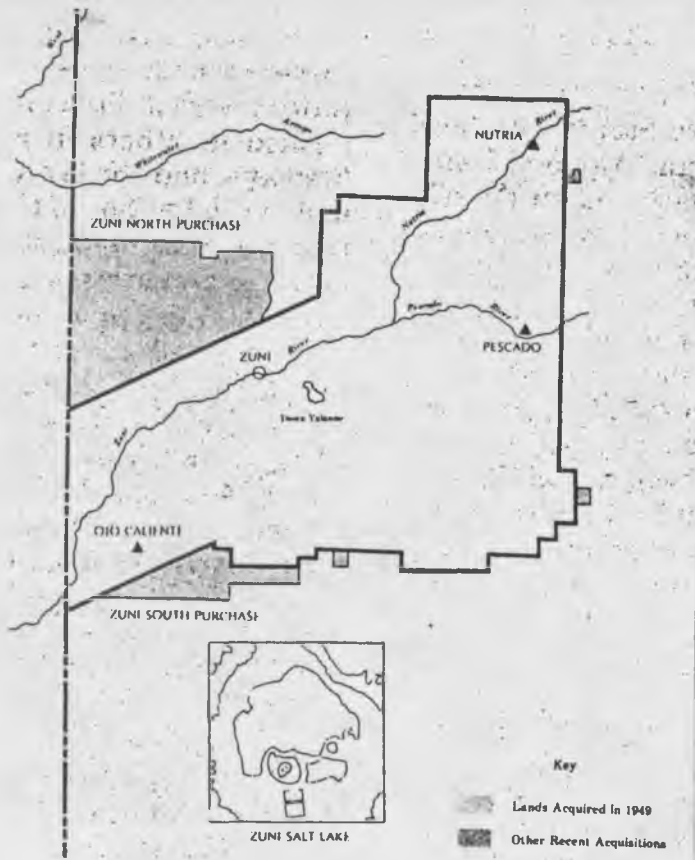


Fig.58 Zuni: Zuni land change: 1949-1982.

Drawn by S. Lyman Tyler.



Fig.59 Zuni: The bird view of a part of Zuni today.

involves the modification and rebuilding of the houses in the village. The positions of the two kivas has been changed as Kroeber surveyed in 1915. The church which is not a native product has also been modified and restored (Fig.60,61).

Parallel with the reduction of the housing units in the village, the distribution of buildings has gradually extended to either surrounding areas of or in distant areas from the village. Such extension, on the one side, is due to the rapid growth of population that is beyond the carrying capacity of the old village; on the other side, it reflects people's intention for the easy access to the sources of their subsistence or for a larger place to set up their buildings.

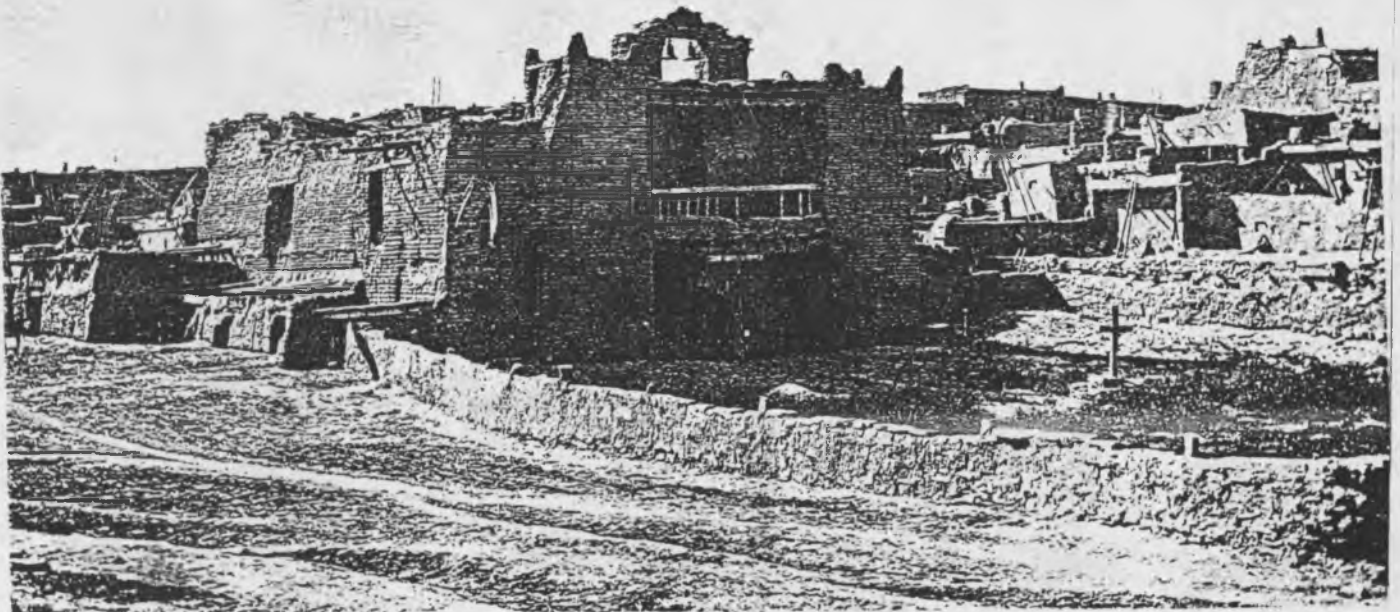


Fig.60 Zuni: The church in the late nineteenth century.

Photo by Ben Wittick.



Fig.61 Zuni: The church today.

A series of photographs of different times illustrate the changes in vertical building organization, building materials and techniques, and immediate physical surroundings. Clearly, the disappearance of the unique terraces should be greatly attributed to the inconvenience and the release of the defensive motivation because of the pacification of the neighboring Indian tribes by the American Government in the late nineteenth century. The inconvenience might be interpreted as difficult access to upper terraces, not easy to obtain sufficient light in inner rooms because of large building blocks, and the weakness of adobe structures which require constant repairs. The reduction of the stories of the terraces has been gradual until 1945 when there was only one room on the second terrace. The changes in building materials and techniques seem to start from windows with the

employment of modern products, glass and lumber; then comes the window arch, the wall ashlar masonry which replaces the old tabular masonry style that required a wall plastered to protect mortar filled joints. Finally, in Fig.62, a ridged and gabled roof illustrates the further development of buildings in the central village and there seems a great increase of modern facilities between 1945 and 1981.

The above examination shows that the procedures of architectural transformation is step by step. That is to say, in the changing process the native characteristics and new features coexist with the former diminishing and the latter increasing to be gradual dominant. Such a change pattern is different from that in Taos Pueblo.

Changes in architecture on the land of Taos Pueblo have two directions. One may be seen as the quantitative change inside the village defined by the wall. The change affects little of the unique characteristics of native architecture (Fig. 63,64,65,66,67). Another could be regarded as qualitative change outside the wall. This architecture has been strongly influenced by American culture. The differences are really striking and thus worthwhile to look at.

Although in Taos Pueblo the subsistence economy has also been shifted to a cash economy because of the strong influence of the outside cultures, especially the Anglo culture, the architecture in Taos village, defined by the wall, has basically remained unchanged. The architectural changes can be understood mainly in terms of a natural increments because of the increase of the population, which could be

seen in three different village layouts at different times. The house units have been gradually increased so that small building blocks have become large. The position of the Feather Kiva has also been changed. The changes in building elements are obvious in terms of employment of modern products but the scale of these elements seems still congruent with the characteristics of native form. The Following description may explain the architectural development inside the village:

Additions have made to the old buildings as the population has increased. Windows have been cut in the lower stories and glass (Fig.68) not allowed in the 1930s, is now used (Parsons, 1936: 17). Doorways are also permitted. Very few were seen on the first floor at the turn of the twentieth century (Bodine,1979, P. 260).



Fig.62 Zuni: Zuni's Buildings.



Fig.63 Taos: Taos pueblo church ruins.

The church was constructed between 1610 and 1612, a few years after Father Zamora, a Franciscan, had organized a mission at the Pueblo. The church was destroyed by American soldiers during the Indian Rebellion of 1847 and was never built.



Fig.64 Taos: Gate between the pueblos and the plain tribes.



Fig.65 Taos: San Geronimo chapel. Completed in 1850 to replace the original church, which was destroyed by Army in 1847. See Fig.63.



Fig.66 Taos: Taos North side pueblo.



Fig.67 Taos: Taos South side pueblo.



Fig.68 Taos: Pueblo today.

The influence of a cash economy is also reflected in the built environment and some collective behaviors. Thus modern cars could be seen inside the village for “ It is an important source of communal revenue at the Pueblo through parking and camera fees(Fig.69)” (Bodine, 1979, 266). “ The traditional occupations of agriculture and stock raising have been greatly reduced. Wage work in the Spanish and Anglo town of Taos, certain federal work projects, some revenue from tourism, and increases in the numbers of persons receiving welfare, old age assistance, unemployment compensation, and government pensions became the chief economic resources of Taos in the 1960s” (Bodine, 1979, P. 266).

The physical form outside the village is much more influenced by the contact culture. There has been an obvious change both in settlement

pattern and individual buildings. The buildings are single story and their types are mixed in terms of adobe houses, houses of concrete blocks, and some mobile homes (Fig.70,71,72,73,74,75,76) Many in Taos have chosen to live away from the old village and build houses with fenced yards, flower beds, and commercial building materials. Since 1971 when the Pueblo Council permitted electricity outside the wall of the old village there has been an increase of numbers of gas and electrically operated appliances.



Fig.69 Taos: Pay admission, parking, camera fee here.



Fig.70 Taos: Building outside the original village.



Fig.71 Taos: Building outside the original village.



Fig.72 Taos: Building outside the original village.

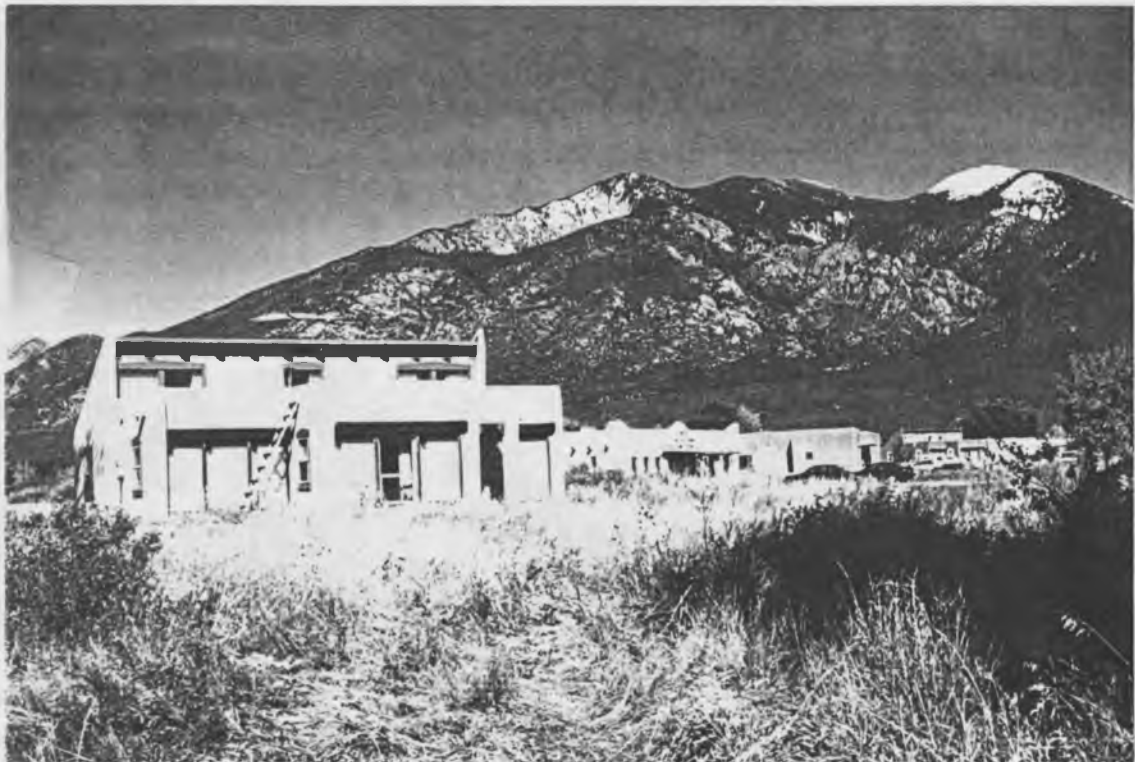


Fig.73 Taos: Building outside the original village.



Fig.74 Taos: Building outside the original village.



Fig.75 Taos: A Mobile home out side the original village.

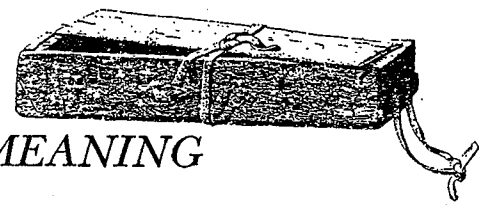


Fig.76 Taos Building outside the original village.

The changes in these two pueblos, however, just reflect one aspect. There is another important aspect in the changing process, which is the continuity in built form and culture.



CHAPTER FIVE
CONTINUITY, IDENTITY, AND MEANING



Although change seems inevitable, continuity is no less important or even more significant in the changing process. Change and continuity are two aspects which define the quality of the changing situation. On the one side, change is indeed of needed necessity to respond and adapt to the changing circumstances; on the other side, continuity is fundamental to keep the changing situation in certain order; that is, the significance of continuity is to regulate the scale and pace of change to such an extent, that there is no cultural disorientation in the changing process. " Constancy and change are fundamental and interdependent concepts underlying human organization. In order to cope with a complex environment every organism requires a mechanism which will simplify environmental complexity and introduce a degree of constancy. At the same time, it must also possess a mechanism capable of making temporal adjustments to a variable environment" (De Long, 1980, P.185).

Continuity seems obvious in some aspects and subtle in other aspects of culture and built form in the two pueblos. The dimensions of continuity could be understood by looking at different situations in two pueblos. Again let us look at Zuni Pueblo first.

In Zuni village the general outlines (the relations of buildings' contours at the ground level) seem preserved if the village layout at different times are compared. Particularly the boundary outlines and

the relations of the church to its surrounding buildings seem to have changed little. Thus the layout looks as if it had the room blocks similar to those in the late nineteenth century with each room block becoming several smaller building groups. Such continuity is of course very subtle but it might suggest that the change in building organization is gradual and has always centered on the original settlement of the village.

Another subtle continuity is the symbolic relationship with the old village when some families move out of the village to either surrounding areas or in the distant areas from the village. Kroeber noticed such symbolic relations:

It is of interest that in spite of the strong inclination of the Zunis of today to leave the old pueblo, they appear to remain attached to it by invisible bonds... When a family makes this move, it appears normally to settle in that part of the suburbs corresponding to the section of the town in which its old home was located. There appears thus to be a marked sense of orientation that survives considerable innovations. Of the same sort is the overwhelming tendency of the people in the outside homes to have their doors face towards the town. Nearly every house north of the pueblo has its door to the south; nearly all on the south side of the river face north, and the exceptions are almost always to be found in houses that lie some distance to the east or west of the north and south axis of the town and therefore have their doors facing

respectively west or east (Kroeber, 1917, P. 198-199).

Thus the significance of the old village has been continuously accentuated throughout the process of architectural transformation. In the early 1960s, " The innermost part of the village surrounding the church was built where the old terraced pueblo once stood, and has an architecture more traditional than that seen on the edge of town. All the houses have flat roofs and walls of rough-cut stone plastered over with adobe" (Adair and Leighton, 1966,P. 2). Such respect for the Middle Place could be also traced in the development of modern houses in the 1970s. These modern houses, located away from the old village, seem to have been designed to surround the central village which has been continuously used as a nucleus for the demonstration and reinforcement of native Zuni culture.

The continuity of architectural form in the old village seems obvious in the preservation of basic routes, the kivas, the flat roofs around the plazas, the houses for Shalako, and the kivas relations to the plazas. All these native components are for the religious ceremonies. The following description illustrated the relationship between these native elements and certain native collective behavior:

Rooftops which ring the plazas in the core of the old pueblo have remained fairly level, and they are still used for public access. Spectators still gather on the rooftops to view ceremonial events, such as a social dance in the big plaza. Many of the plazas and other open areas used

ritually have been enlarged, but none of the sacred areas have been built over. finally, the remaining of the rooftop terraces in the core of the pueblo are still used for many activities, such as bread baking (Ferguson and Mills, 1980, P. 7-8).

In addition the houses constructed for Shalako ceremonial are built by Zunis themselves although the dwellings are sometimes built by outsiders, which may demonstrate Zunis' commitment to their native religion.

Despite the modification or change in some native activities the cooperative attitude in religious ceremonials seems to be greatly stressed. The consistency of the religion and world view are intensively expressed through the ceremonials taking place in these native components. When ceremonials take place according to native cultural schedule, many Zunis come to the old village to participate either as performers or as spectators, reinforcing the cultural tie. The priests still have the same power in the ceremonial as that in the past. The open space south to the Zuni River has been preserved for Shalako ceremonial and the built environment still functions as sacred stages for the performance of the ceremonials.

The continuity discussed above is mainly in the sense of preservation of the native components. The continuity may be, however, understood in another direction in how Zunis make the non-native

physical components contain native meaning. The typical example is the Catholic church at the center of the old village.

In the late nineteenth century Zunis seemed to care for church yard and the cross but not the church. When Cushing was at Zuni in the 1880s he urged Zunis to either repair and restore the church or tear it down because it was unfloored and the walls were slowly crumbling. But the suggestion received no response and the structure remained it as it had been. The Zunis believed that their ancestors who were buried within the churchyard would be unfamiliar with the environment if the church were changed too much (Cushing, 1891, P. 337). In the early 1910s Zunis wanted to widen the alley between the west end of the church and the pueblo room blocks. This led the Zunis to tear down the wall of the church and rebuilt it a few feet further in. The northern wall was similarly reconstructed (Kroeber, 1917, P. 204). In the 1960s Zuni pueblo participated in a project to restore the old church. On the interior walls of the restored structure, a mural was painted by a Zuni artist to represent Zuni religious motif: Kachinas set against the Zuni landscape in a progression through the religious calendar. Thus more native meaning has been attached to the foreign form.

These continuities in physical form reflect Zunis' attitude towards the changing socio-cultural situation. Such an attitude is different from that of Taos pueblo.

The continuity of the built form in Taos village (defined by the wall) is very obvious. The built form is essentially native except for some small-scale changes. The terraced buildings with outdoor ladders, the drying racks, the ovens the kivas, and the dance places are basically the same as those in the late nineteenth century. Furnishings used in Taos village are simple and always almost utilitarian. Taos Pueblo is also the last New Mexico pueblo to let electricity into the land but only outside the wall of the old village. The ceremonial system as essential native cultural components has remained intact and the calendar for the religious ceremonials is almost the same as Parsons discussed in 1936. The following story illustrates the great concern of Taos people about the religious beliefs and corresponding physical form. The story is about the struggle for regaining the Blue lake, most sacred shrine of Taos Pueblo.

The struggle began in 1906 when 48,000 acres of Taos land, including Blue lake, were designated as a national forest. Since then, non-Indians came to this sacred land which Taos people used for meditation, prayers, ritual, and initiation. Outsiders came fishing, bathing, laundering clothes, and tossing fish entrails and other debris into the lake, and keeping horses tied near the lake shore so that the land was spoiled with piles of manure, accumulations of beer cans, food cans, and the general camp refuse characteristic of areas visited by sportsmen. Such serious pollution "to the people of Taos Pueblo as utter profanation and desecration of their most sacred spots." (Ellis, 1962, P. 90) It was a native concept that the lake should be "not polluted by any type of refuse and the area around them is to be kept

clean, a duty carried by certain of the Taos Pueblo officers." (Ellis, 1962, P. 90). As a result, the battle for regaining the lake continued until 1970 when the people of Taos Pueblo celebrated the return of the sacred lake(Fig.77,78).

The continuity in terms of culture and built form in the two pueblos has been discussed. It is now necessary to do some comparative analysis to understand the significance of the change and continuity in physical form.

In Zuni Pueblo, it may be clear that the native physical environment has been transformed into a seemingly modern environment while the culture has changed from almost exclusive in the late nineteenth century to inclusive today. Correspondingly some native physical components (basic routes for the ceremonials, kivas with outdoor ladders, and plazas) for accommodating the native ceremonials have remained to be the continuous components in the physical form while the dwelling units as changed components have been gradually modernized to correspond to the cultural change. The coexistence of continuous components and changed components cause the complexity of the meaning of the built environment. On the one side, the modern aspects indeed dominate the visual quality and correspond to the fundamental shift of the economy; on the other side, however, the physical form can not be labeled as absolutely modern because of the very existence of the native components which make the physical environment significantly distinct from any other modern environment. This is because on one side, these native



**Fig.77,78 Taos:
The people of
Taos celebrated
the return of the
Blue Lake. Photo
by Den Budnik.**

components function as symbolic manifestation connecting the historical Zuni with present Zuni; on the other side, they are experienced in a native way for the religious ceremonials so that they can not be considered as the exhibition of cultural artifacts in a museum.

Furthermore the significance of these native components lies in their exclusiveness which is critical to the identity of Zuni physical form. Here the identity could be understood as the principal characteristics of the physical form and such identity may be sometimes shifted to be focusing on the unique characteristics when the physical form is compared with other physical form. It could be argued that the native identity of Zuni physical form has been changed to be a new identity: the changed components provide the modern aspects of the identity while the continuous components offer native aspects of the identity. The meaning of the physical form thus could be understood in terms of this new identity. On the one side, the meaning is partially shaped by the changed aspects responding to the changing socio-cultural situation and reflecting the reorientation of the native cultural value system; on the other side, some native components demonstrate the exclusiveness of the physical form which has continued to accommodate the unique cultural activities and thus contribute greatly to the meaning of the physical form. Here it should be explained that although the native ceremonials are closely related to agriculture, the deeper purposes of them are for general fecundity and the goodness of Zunis. That is why the ceremonials have still continued.

The dimension of the identity and meaning seems different in Taos Pueblo. The wall functions as a cultural boundary to demarcate the difference between the inside and outside. Inside the wall, nearly all the native physical components are preserved thus the identity in terms of the principal characteristics is at the same time the identity in the sense of unique characteristics. The meaning of the physical form seems strongly matching the physical manifestation to demonstrate not only the continuity of the native meaning but also the dominant native cultural value after its reorientation because of the constant contacts with outside cultures. The wholly native identity of the physical form seems very important to some of Taos people so that they value it much more than the inconvenience of the terraced buildings. Such conscious reaction may greatly stress the identity in terms of uniqueness, that is to say, these Taos people care very much about how their physical environment looks to demonstrate their strong sympathy to the native culture. In contrast, the development of the physical form outside the village seems similar to the development of dwelling units in Zuni Pueblo in terms of modernization. Such discrepancy to a great extent reflects the different values between cultural members mainly between the old generation and younger generation after the intensive contacts with foreign cultural values. The old people seem to be sticking to the native cultural value while the young people have more interest to enjoy modern convenience. As Bodine pointed out " The majority who have left their reservation are young adults and their offspring's... for they are in the most favored age group for urban employment" (Bodine, 1979, P. 266). Such different values between cultural members might be also the reason for

explaining the different paces of the transformation of physical form between the central village and the fringe areas. While enjoying the modern convenience people who live away from the original settlements still participate the native ceremonials. Indeed in both Taos and Zuni Pueblos the original settlements are the center for continuing and reinforcing some of the native cultural values.

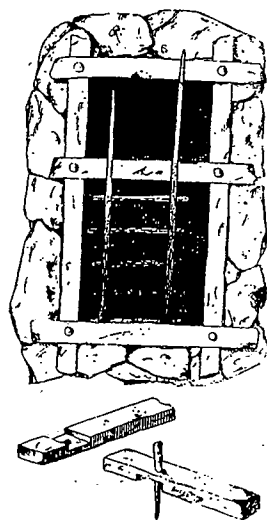
It seems clear that in Taos village the role of native architecture is more significant than that in Zuni Pueblo. The people of Taos pueblo have intentionally preserved the physical form inside the village and the preservation has stressed the almost exactness to be consistent to the characteristics of the native physical form thus small- scale changes affect little the unique features. The preserved native form seems to be a mechanism that native people use to express the native aspects of cultural identity. Indeed the native form does physically provide the distinct aspect of this cultural group, particularly to outsiders. Of course the meaning of the physical form is more than the physically cultural expression because the form still accommodates the life of native people.

The concern of the identity of physical form might be also seen in the different features between the Kivas and house units in Taos village. Such difference may suggest that the buildings for different purposes should have different physical features which communicate different messages. While in Zuni Pueblo where the differences between the Kivas and house units are much more subtle, especially in the late nineteenth century, these two building types looked almost same.

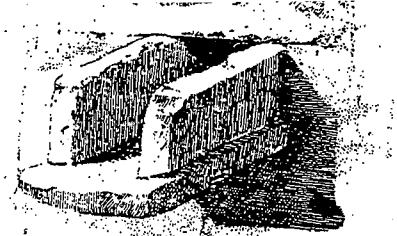
Even now the Kivas have the doors at the ground level although the hatchways and the ladders are still there. It may be the case that in Zuni Pueblo the existence of some native components is fundamental for the native ceremonials but Zunis care much less about the exactness of the native features of these components. As a result these components could be modified or changed so that some of their native characteristics have been lost, which causes some alteration to the native ceremonials. Instead of entering the houses through the hatchways on the roof the Shalakos now entered the houses through the doors at ground level. The continuity in terms of native cultural value seems lying more on the religious ceremonials than on the preservation of native physical features. The development of house units seems to further illustrate that Zunis' less care about preservation of native features.

Through the comparison it could be further argued that there seems to be a delay or even a discrepancy between the change in culture and change in physical form. That is to say, the change in culture does not have to be reflected in the change in the physical form or there should be a process within which the change in physical form gradually corresponds to the change in culture. Indeed change in culture offers the opportunity to and influence upon the change in the physical form and the dimension and degree of the change in the physical form depends very much on the attitudes of the cultural members towards the changing situation. Once a culture has experienced a fundamental change such as the basic shift of subsistence economy, the meaning of the physical form has also been shifted to correspond to the cultural

change. In the case of Taos village the exclusive physical features increase in importance so that the meaning of the physical form has been intensified to be the physical expression of native aspects of cultural identity; while in the case like Zuni Pueblo the meaning of the physical form is the new identity defined by both the physical components which have been preserved (continuous components) and those which have been changed (changed components). These two components demonstrate the continuity and the change in physical form. It seems that the continuous components are those for accommodating the enduring cultural activities which express the basic beliefs of the cultural members. The changed components, on the one side, reflect the different values between cultural members because of the contact with outside cultural values; on the other side, they are more secular if compared with the continuous components to accommodate the new pattern of daily life.



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