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1965

OLMEC: AN EARLY ART STYLE OF PRE-COLUMBIAN MEXICO

by
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A Dissertation Submitted to the Faculty of the

DEPARTMENT OF ANTHROPOLOGY

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY

In the Graduate College

THE UNIVERSITY OF ARIZONA

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THE UNIVERSITY OF ARIZONA

GRADUATE COLLEGE

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Figure 1. Map of Mesoamerica showing sites mentioned in text.

PREFACE

In 1956, Miguel Covarrubias gave a course at the Escuela Nacional de Antropología e Historia in Mexico City. I was fortunate enough to attend until classes were suspended because of a student strike. By the time of the strike we had covered the Olmecs and maestro Covarrubias' enthusiasm had infected us all. I remember one particular occasion when I had persuaded my friend Fernando Horcasitas to bring to class a small yoke, purchased at Tlatilco, featuring a fierce Olmec visage. Visibly excited by the piece, Covarrubias gloated, "Let them deny an Olmec presence at Tlatilco after seeing that." "Them" was in obvious reference to the U. S. Mayan scholars of the Carnegie Institution, who blindly refused to see Olmec art as coming before Maya.

In 1957, Miguel Covarrubias died. He left a superb collection of Precolumbian antiquities to the National Museum of Mexico, many bright and happy murals, several beautifully illustrated books, and a multitude of saddened friends. Very few men leave so much. Among his notes and papers was a chart on which were listed, across the top, 138 Olmec pieces from private and museum collections. In the left-hand margin were set down 89 stylistic elements such as eye-type or

hand position. Within the matrix, the presence of each feature was marked with an X for each individual piece.

I did not know of Covarrubias' chart until 1962 when I ran across a copy while collecting materials for the present study. It seemed of great value just because of the information it contained. Later, I showed it to Dr. Jerry Miller of the Sociology Department at the University of Arizona with whom I was studying social statistics. He suggested that the data on the chart might lend themselves to Guttman scaling and referred me to the literature on the subject. Dr. Miller's advice has proven to be of great utility; without it the conclusions I was able to reach would have been overlooked.

The purpose of this study has been to analyze the earliest great style of Precolumbian Mexico, the Olmec, in order to determine how it evolved and from where it originated. Stone monuments with a stylistic unity that has come to be known as "Olmec" are found from northern Veracruz State to El Salvador (Map, Fig. 1). Their heaviest concentration, however, is in the lowlands of the Mexican Gulf Coast between the Papaloapan and Tonalá Rivers (Map, Fig. 2). Here, massive sculpture was integrated into the architectural complexes thought by archaeologists to represent early ceremonial centers. The most famous and best explored of these is La Venta (Fig. 3), a small island in northern Tabasco. Much of the solid knowledge we have about the creators of Olmec art has come from the patient explorations in

the La Venta area by the late Frans Blom and Oliver LaFarge and by Matthew Stirling, C. W. Weiand, Philip Drucker, Robert Heizer, Waldo Wedel, and Robert Squier, among others. It is a pleasure to acknowledge an obvious debt to them.

Olmec sculpture is also found scattered in museum collections. In trying to see as many of these as possible I was graciously received by the following persons: Dr. Frederick Dockstader, Director, Museum of the American Indian, Heye Foundation; Dr. Gordon Ekholm of the American Museum of Natural History; Dr. Clifford Evans of the U. S. National Museum; Miss Julie Jones of the Museum of Primitive Art; Prof. Alfonso Medellín Z. of the Museo de Xalapa, Veracruz; Sr. Carlos Pellicer, Museo de Villahermosa, Tabasco; Prof. Arturo Romano, ex-Director, Museo Nacional de Antropología e Historia, Mexico, D. F., and Dr. Robert Wauchope, Director, Museum of the Middle American Research Institute of Tulane.

For his unpublished manuscript on Olmec style as well as for several reprints of articles I wish to thank Dr. Michael Coe of Yale. For keeping me abreast of their exciting work on scale analysis I am grateful to Dr. Robert L. Carneiro of the American Museum of Natural History and to Dr. Ward H. Goodenough of the University of Pennsylvania. Dr. C. W. Weiand was kind enough to send me a letter in answer to a query. Prof. Pall Keleman, author of Medieval American Art, gave me wise counsel and warm encouragement. To Prof. John Paddock,

my colleague at the University of the Americas, is owed special thanks for seeing that my teaching assignments were covered during my absence from Mexico City and for sending me a photograph by Roman Piña Chan of the Huamelulpan monolith which proved to be invaluable for my researches. The financial aid of the U. S. Steel Foundation is gratefully recognized.

Staff members of the Department of Anthropology, University of Arizona, where this study was done, have gone far beyond the requirements of their positions in extending succour and solace. Mr. Frederick Pleasants gamely suffered as my sounding board on many occasions. Prof. Clara Lee Tanner's careful reading of the manuscript was evident from her penetrating questions which often led to helpful refinements. Dr. Emil Haury, Department Head during my stay, helped me over many a financial and academic hurdle; his personal warmth and his professionalism in archaeology have been of great inspiration. Dr. Raymond Thompson, present Department Head, served as my dissertation advisor. He has agonized over my writing more than I have because of his highly developed sensitivity to the choice of a wrong phrase or reference. His editorial abilities remain, to me, a constant and delightful source of amazement.

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ABSTRACT

The discovery of monolithic, ancient sculpture of a distinctive unknown style in the Gulf Coast region of Mexico began as early as 1862 with Melgar's finding a Colossal Head at Tres Zapotes, Veracruz. In 1907, Holmes gave notice of the Tuxtla Statuette of similar style from the same area. Blom and La Farge, exploring in northern Tabasco in 1925, discovered the site of La Venta where gigantic sculpture of the same kind abounded. Saville saw that certain anthropomorphic axes in museum collections were stylistically akin to the Mexican monoliths. He attributed these works to an ancient people from the Mexican Gulf Coast mentioned by 16th century chroniclers: the Olmecs. During the early 1940's, Stirling, of the Smithsonian Institution, made the Olmec style generally known by excavating monumental sculpture from Tres Zapotes, La Venta, and Cerro de las Mesas. Mexican scholars, led by Caso and Jiménez Moreno, saw the Olmec as a "mother culture" from which sprang the later Classic cultures including the Maya. U.S. scholars in general favored the view that Olmec and Maya developments were contemporary. With the discovery by Libby and Arnold in the late 1940's of a technique that led to radiocarbon dating, it became possible to show that, indeed, the Olmec style preceded the Maya. Many questions remained, however, including the geographic origin

of the Olmec and the nature of their society. Through an analytic study of the Olmec art style the present study seeks to find answers.

An anthropological approach to art, stressing the role of cultural transmission, is set forth as a theoretical basis for attacking the problem. Art style is characterized as being akin to language in that it can be broken down into components and that it evolves through "drift."

Social and psychological theories are applied to Olmec art in order to gain insight into the nature of Olmec society. The theories of Redfield, Sorokin, Marx, Durkheim, Freud, Beardsley, and J. L. Fischer when thus utilized produce inferences that agree strikingly. Olmec religion is inferred to have centered around ancestor worship and a jaguar totem because of the content of the art and its placement in ceremonial centers surrounded by small agricultural centers.

To show the evolution of Olmec style, the process of Guttman scaling is employed on two object types: Colossal Heads and votive axes. This results in a series for both that shows changes in the stylistic factor--the "drift"--which are inferred to be due to evolutionary development. This is believed to be the first application of Guttman scaling to an art style.

The Colossal Heads show by their development that they were produced successively in Tres Zapotes, La Venta, and San Lorenzo. This might indicate a respective shifting of the seat of political power.

The series for axes shows that the evolution of Olmec art probably led to the earliest Maya art as exemplified by the stucco masks on Pyramid E-VII sub at Uaxactun, Peten, Guatemala. A possible evolutionary series for Olmec figures in niches is suggested as leading up to the similar Maya art form. Proskouriakoff's idea that Maya monuments are divided into series of monuments depicting a standard set of events in the life of individual rulers might also apply to Olmec. In this case Olmec monuments showing infants would mirror presentation rites rather than sacrifices.

The evolutionary series of axes points to Olmec art leading to the elaboration of scroll patterns in the Classic art of central Veracruz.

It is held that the provenience of the axes means little in seeking the origins of Olmec art because axes constitute art mobilier.

However, gigantic sculpture showing the same traits as axes inferred to be earliest in the evolutionary sequences would be of value. Just as the giant sculpture of La Venta, Tabasco, appears to be late in the development of the Olmec tradition when compared to the axe series, so that of Huamelulpan in the Mixteca Alta region of Oaxaca is shown to be earliest. The evidence for the spread of Olmec style from this central location through river valleys to other zones supports this contention. Therefore, Olmec artistic development probably originated in northwestern Oaxaca.

Figure 3. Map of La Venta, Tabasco, site.

CHAPTER I

HISTORY OF THE "OLMEC PROBLEM"

The story of the "Olmec problem" begins more than a century ago with the discovery in 1862 by José M. Melgar of the first known monumental Olmec sculpture: the Colossal Head of Tres Zapotes. His first report was published in 1869 in the Boletín de la Sociedad Mexicana de Geografía y Estadística. In a followup article two years later, Melgar told of the discovery in detail:

It was in 1862 when I made several trips in the region of San Andres Tuxtla in the State of Veracruz in Mexico that I heard of a colossal head which had been unearthed a few years before in the following manner. About a league and a half from a sugar plantation (Hueyapan) on a shoulder of the San Martin Mountains, while making a clearing for a milpa, a workman told of having found projecting above the ground what seemed to be the bottom of a huge inverted iron kettle. He notified the owner of the plantation who ordered its excavation, when in place of a kettle the above-mentioned head was found. It remains inside a hole made in exposing it because being made, in my opinion, from granite and being two yards in height with the other proportions corresponding, although they attempted to remove it, they found it impossible to do so. Thus the situation remained. The discovery was mentioned but nothing was done about it. As I have already mentioned, on one of my trips in search of antiquities I arrived at this same plantation and requested the owner to guide me to the head. We went to it and on seeing it I was amazed. As a work of art it is without exaggeration a magnificent sculpture as may be judged by the photograph which accompanies this. But what amazed me most was the Ethiopian type which it represented. (Melgar 1871. Translated and quoted in Stirling 1943a: 17.)

Melgar did not use the term "Olmec" here, rather he stressed that the giant negroid head could be ascribed only to Ethiopian colonists.

Alfredo Chavero (1841-1906), lawyer, poet, Congressional deputy, Governor of Mexico's Federal District, and author of 18 theatrical works, somehow found time to become the leading authority of his day on Mexican ancient history. In the encyclopedic work, México a Través de los Siglos, Chavero published in 1887 an engraving of the Colossal Head from Tres Zapotes to support Melgar's idea. As additional proof, he illustrated a large granite axe, now in the Museum of the American Indian (Fig. 37), like the head from the Veracruz coastal region. In pointing out that the face sculptured on the axe was similar to the Tres Zapotes find in its headdress and physical features, Chavero was the first to hint that the giant head was not an isolated phenomenon, but was part of a complex. Like Melgar, he did not mention the term "Olmec."

Others did speak of the Olmecs at the close of the 19th century. In 1885 the Geographical Society of Paris published a note "Opinion au sujet des Olmeques" by M. Alphonse Pinart. Pinart connected them with the Tepehuas of the eastern slope of the Sierra Madre Oriental where the states of Veracruz, Hidalgo, and Puebla come together. In visiting the Tepehuas, he discovered they called their language "Ulmeca."

The question of Olmec identity arose at this time because of the first widespread publication of the 16th century chroniclers, many

of whom mentioned the Olmecs. One, Franciscan Father Bernardino de Sahagún (1961: vol. 10, 187-8), wrote of them:

These, all of these, all were the people from the east. They were also named Tenime, because they spoke a barbarous tongue. These, according to the tradition were Tolteca--a branch, a remnant of the Tolteca. These were rich; their home, their land, was really a land of riches, a land of flowers, a land of wealth, a land of abundance. There was all manner of food; there grew the cacao bean, and the "divine ear" spice, a wild cacao, and liquid rubber. There the magnolia and all different kinds of flowers grew. And there were the beautiful feathers, the precious feathers, the feathers of the troupial, the red spoonbill, the blue cotinga, the white-fronted parrot, the Mexican parrotlets; the resplendent trogonorus was also there. Also green stones, fine turquoise were found there. Also gold, silver were found there. It was a good, a beautiful place. The old people gave it the name Tlalocan, which is to say, "place of wealth".

Early Finds

Eduard Seler, a German investigator of Sahagún's works, showed more insight than Pinart in discussing the "Olmeca Uixtotin." In 1906, he noted that 16th century sources named them as inhabitants of the southern parts of the Gulf Coast who came originally from the Tlaxcala region. Seler (1906) attributed to these people certain monuments from the region of Tuxpan, Veracruz--monuments which would not fit into the Olmec style as defined today. Nevertheless, he was the first scholar seeking to associate an art style with the Olmecs; the trend Seler began is important to our story.

Seler and his wife, Caecilie, visited the Tres Zapotes region in 1905 and photographed the Colossal Head and the elaborately carved stone box now called Monument C (Fig. 4). In the account of the trip (Seler-Sachs 1922: 544), Mrs. Seler attributed these monuments to no group. She said only that the head doubtless was not attached to a body, a large solitary head being known from Mexico City of the Moon Goddess Coyolxauhqui. The Tres Zapotes head seemed not to depict a specific god, however, but was a portrait ("Er erweckt vielmehr fast die Vorstellung eines Bilnisses").

The year 1907 gave the world notice of the Tuxtla Statuette with the publication of W. H. Holmes in American Anthropologist "On a nephrite statuette from San Andres Tuxtla, Vera Cruz." Holmes, then curator at the Smithsonian Institution, was to end his long government career as director of the National Gallery of Art. His art training and talent produced never-surpassed illustrations of Mesoamerican ruins. Certainly he was one to appreciate the esthetic value of the Tuxtla Statuette.

In June 1902, Holmes had received a letter from one Alfred Bishop Mason in Orizaba, Veracruz:

I send you herewith two photographs of a jade idol which was dug up by the plow in the district of San Andres Tuxtla on the Gulf coast . . .

Then, in July of the following year, a letter postmarked New York

Figure 4. Monument C, Tres Zapotes, Veracruz.

reached Holmes from an R. E. Ulbricht who had brought the statuette from Veracruz:

If this should be of interest to you for the purpose of deciphering the hieroglyphs or to acquire it for the collection in the Smithsonian Institution, please advise me and I will take pleasure in sending it to you by express.

Thus, without leaving Washington, Holmes had the fantastic luck of acquiring through two courtly correspondents--total strangers apparently--the most remarkable figurine to come from Mesoamerica (Fig. 5).

Holmes's publication of the statuette did credit to the find. It included photographs and drawings depicting clearly the glyphs that covered it (Fig. 6). The appellation "Olmec" was not used. Commentaries on the hieroglyphs from Maya specialists had been solicited. The 6 1/2 inch Tuxtla Statuette carried a Long Count date of 8.6.2.4.17 now correlated at A.D. 162 using the Goodman-Martinez-Thompson system. Coe (1962: 92) classifies the statuette as of "epi-Olmec style." The importance of the figurine lies in its being precisely situated in time and space and in seemingly falling between Olmec and Maya stylistically (See Ch. 5).

A date even earlier than that on the Tuxtla Statuette was reported in 1926. About 400 air miles southwest from the Tuxtla region, on a hacienda called El Baul near the Pacific coast of Guatemala a large stela bearing a standing figure wearing an elaborate headdress was discovered by T. T. Waterman, technical director of the National

Figure 5. Tuxtla Statuette.

Figure 6. Glyphs from the Tuxtla Statuette.

Museum at Guatemala City. Waterman painstakingly traced its shallow relief in charcoal prior to photographing it. When the results of his effort were published in 1924, they were, to use his words "appropriated in a way" by the German investigator Walter Lehmann. Actually all Lehmann did was to note that the figure on the El Baul stela faced a column of bar-and-dot numbers that made up an Initial Series date.

Just as on the Tuxtla Statuette, the numbers appeared alone and lacked the associated time period glyphs shown by all Initial Series attributed to the Maya. The first number clearly read as a seven placing the date within the seventh cycle or before A. D. 62 in the Goodman-Martinez-Thompson correlation. Lehmann's (1926: 175, f.n. 4) reading was 7.19.7.6.12 12 Eb, 20 Kankin.

Waterman (1929) attacked Lehmann's position, holding that the sign of a mandible interpreted as the day sign Eb was used only by the Aztec. Therefore, he concluded, the monument was an Aztec copy of a Maya stela. Coe (1957: 600-3) has convincingly refuted this view. His slight correction of the Lehmann reading leaves us with 7.19.15.7.12 12 Eb, that is, A. D. 36 using the GMT correlation.

The Discovery of La Venta

A second Colossal Head was hit upon in 1925 by Blom and La Farge. The Danish archaeologist Franz Blom was joined by 24-year old Oliver La Farge to form the two-man "Tulane Expedition to Middle

America, " which sailed from New Orleans on February 19, 1925. La Farge had been graduated the year before from Harvard where he edited the Lampoon. He had behind him three seasons of field work in Arizona.

Exploring in southeastern Mexico, Blom and La Farge climbed the San Martín Pajapan volcano where a magnificent idol of purest Olmec style awaited them (Blom and La Farge 1926: Fig. 43, p. 47). Since it obviously was not of Maya, Aztec, Totonac or any other familiar style, they wrote, "For the time being we would not venture to ascribe it definitely to any culture" (p. 46). The two were guided by the narrative of the Spanish conquistador Bernal Díaz del Castillo which described a populated site about one league from the mouth of the Río Tonala. Here they ran across the Olmec center La Venta, a site that had been long abandoned when Bernal Díaz arrived in New Spain in the early 16th century.

At La Venta, they cleared and photographed a half-dozen large stone monuments including "the most amazing monument of them all"-- a giant head too large to excavate. Even though only the top was exposed down to eye-level (Fig. 7), they noted its resemblance to the Colossal Head at Tres Zapotes.

In Stela 2 (Fig. 8) they saw Maya influence noting that the central figure with an elaborate headdress held diagonally a ceremonial bar. Of Altar 4 (Fig. 9), they said: "There is a strong Maya feeling

Figure 7. Top of Colossal Head at La Venta (after Blom and La Frage 1926).

Figure 8. Stela 2, La Venta.

Figure 9. Altar 4, La Venta, Tabasco.

about this monument. The person in the niche resembles figures on Stela E at Piedras Negras." Nonetheless, they were forced to conclude: "La Venta is certainly a place of many puzzles, and further work should be done there in order to ascertain more definitely where this ancient city should be placed in our sequence of cultures" (Blom and La Farge 1926: 87).

The two explorers were intrigued that such large blocks of igneous stone could be found on an island in a swamp. They asked petroleum geologist N. F. Keller about this and were told that the nearest outcrops of this type rock lay 100 km. upriver at La Laja. They investigated the origin of two stone monuments at a school in Villahermosa and found that 20 years earlier they had been brought there from La Venta by a lumber concessionaire.

Blom and La Farge had ill luck in that much of the film exposed at La Venta came out blank. The situation was remedied somewhat by the publication in the British journal Man of photographs taken by H. A. Knox of Stela 1 and Altar 4 at La Venta (Joyce and Knox 1931).

In a review of the book that resulted from the Blom-La Farge explorations, Hermann Beyer (1927) published what he called an "Olmecan idol" because its features reminded him of those on the headdress of the San Martín Pajapan statue: slanted eyes, broad flat nose, and a downturned feline mouth. Beyer's idol (Fig. 37) was an axe similar to that Chavero published in 1887. We cannot credit Beyer

with assigning the name Olmec to the art style because, in the end, he equivocated by saying the deity represented in the headdress pertains "to the Olmecan or Totonacan civilization" (italics mine). Still, Beyer's statement soon was to influence someone else to explicitly connect the name Olmec to the style of the jaguar masks.

The Naming of the Style

Marshall H. Saville was a staff member at the Museum of the American Indian in New York City. It was here that the axe published by Chavero came to rest after a stay in Switzerland. The acquisition prompted Saville, a Mexican specialist, to write a comparative study of the known axes of this type. He also noted their stylistic resemblance to other forms: a jadite bead ornament, a figurine, a head, and idol. These shared a common style and could be "safely assigned to the ancient Olmecan culture, which apparently had its center in the San Andrés Tuxtla area around Lake Catemaco, and extended down to the coast of the Gulf of Mexico in the southern part of the State of Vera Cruz" (Saville 1929: 285).

George C. Vaillant of the American Museum of Natural History concurred with Saville's view. Vaillant was the rare combination of scientific archaeologist and humanist. His published analyses of Aztec and Maya pieces show a deep appreciation of art and understanding of aesthetic principles. Noting that "we know the art styles of the Aztec,

the Toltec, the Zapotec, perhaps the Totonac, and certainly the Maya" but not the creators of the art style which depicted tiger faces and baby faces, he continued:

But there is often described in the traditions a highly civilized people called the Olmec, who lived anciently as far north as Tlaxcala, but were later dispersed to southern Vera Cruz, Chiapas, southern Puebla, and eastern Oaxaca. They were famed for their work in jade and turquoise, and were credited with being the chief users of rubber in Central America.

The geographical position of these people roughly coincides with the distribution of the "tiger-face" and "baby-face" sculptures and they could have been in contact with Nahuatl tribes to the north, Zapotec to the west, the central Maya to the southwest, and the Maya and Mexican populations of Yucatan to the southeast. However, no material culture has been assigned to these Olmec.

Thus in view of an art style which is foreign to the defined civilizations, a geographical situation roughly coterminous with the centers of distribution of the art styles, and a historical position which is relatively early, it would seem that the Olmec fulfill very well the requirements for the peculiar art styles we have been discussing. Moreover, Professor Saville in his paper on "Votive Axes" lends his authority to the suggestion (Vaillant 1932: 519-20).

Vaillant recognized that since no scientific excavations had been carried out in the Olmec area, his hypothesis was at best impressionistic. To strengthen it, he urged a program of exploratory work in the area. In 1932 the Bureau of American Ethnology of the Smithsonian Institution formulated a plan to study archaeologically the margins of the Maya zone.

March, 1934, marks the discovery in an isolated part of eastern Morelos near Jonacatepec in central Mexico of the Chalcatzingo reliefs of Olmec style (Figs. 10-13). In reporting her find, the Mexican

Figure 10. Reliefs from Chalcatzingo, Jonacatepec, Morelos.

Figure 11. Reliefs from Chalcatzingo, Jonacatepec, Morelos.

Figure 12. Detail of the Chalcatzingo reliefs.

Figure 13. Detail of the Chalcatzingo reliefs.

archaeologist Eulalia Guzmán (1934: 251) failed to pinpoint the style:

"Not being Aztec representations, they can be those of some of the cultural groups that inhabited what is today the State of Morelos, the Teotihuacanos, or the Archaics" (translation mine).

The Role of the National Geographic Society

By 1938 the Bureau of American Ethnology program had reached the stage at which the area to the west of the Maya could be studied. Early in the year, the director of the Bureau, Matthew W. Stirling, visited southern Veracruz. Guided by Weyerstal's published accounts, he located the Colossal Head at Tres Zapotes, cleared the earth from its face, and carried photographs of it back to Washington. These convinced the officers of the National Geographic Society that Stirling's investigations should be supported. He returned to Tres Zapotes on January 2 of the following year as leader of "the National Geographic Society-Smithsonian Institution Expedition to Vera Cruz." The first task was to uncover the giant head. Twenty men did the job in two days. The head rested on a prepared flagstone surface. Stela A, originally about 18 feet high, was found in two pieces, apparently intentionally broken (Stirling 1943a: 13). The magnificently carved box, Monument C (Fig. 4), originally described by the Selers, was excavated once more.

On January 16, 1939, Stirling made a truly revolutionary discovery. At the base of the largest mound at Tres Zapotes the corner

of a worked stone projected inches above ground. Unearthing it, Stirling found a vertical row of bar-and-dot numbers apparently forming a date (Fig. 14). On the well-worn side opposite snarled a highly stylized jaguar mask of Olmec tradition (Fig. 15). As on the Tuxtla Statuette and on the El Baul stela, the numbers lacked the designating glyphs for time periods. Like the other Tres Zapotes monuments this one had been broken. The break occurred so as to leave no baktun or cycle number. Nevertheless, a day sign with its coefficient 6 remained. Within this context only a baktun reading of 7 could be compatible with the day number. Stirling's reading of the monument, Stela C, was (7).16.6.16.18, 6 Eznab 1 Uo, B.C. 31 in the Goodman-Martinez-Thompson correlation or B.C. 291 in the Spinden correlation. Stirling used the latter in the National Geographic article "Discovering the New World's Oldest Dated Work of Man."

Stirling's reading of Stela C was attacked by Mayan scholars Morley (1946: 41) and Thompson (1941: 14-15), who had credited the Maya with the invention of the calendar and the numerical system used in Maya inscriptions and manuscripts. Discoveries made since 1939 using the new radiocarbon method for dating have borne out the Stirling placement of Stela C within cycle 7 (Coe 1957: 598-9). The great Maya epigrapher J. Eric Thompson, who first opposed the reading, later admitted the possibility of its correctness (Thompson 1954: 50). Just enough information was left on the broken stone to permit a reading.

Figure 14. Glyphs on Stela C, Tres Zapotes, Veracruz.

Figure 15. Jaguar masks. Top, from Stela C, Tres Zapotes; center, from sarcophagus, La Venta; bottom, Monument 15, La Venta.

Stirling (1939: 216) remarked without exaggeration, "If three inches more had been broken off either the top or the bottom of the monument, the date never could have been determined."

La Venta Revisited

During the 1940 field season, Stirling followed the footsteps of Blom and La Farge and worked at La Venta. He was particularly desirous of uncovering the giant head to compare it with the one from Tres Zapotes. He located it and the 5 other known monuments there as well as 14 unknown pieces. Included in these were Altar 5--the "Quintuplet Altar" (Figs. 16 and 17)--and three additional Colossal Heads facing north forming an east-west row (Map, Figs. 3 and 35).

Superb photographs of the La Venta monoliths were published immediately after the field season in the large circulation National Geographic Magazine of September, 1940; La Venta was made known to the general public for the first time. The sculptors of the pieces were called "Olmecs" in the Geographic story. The impact of the article was sensational, seemingly guaranteeing Stirling Geographic financial backing for future years.

Stirling's archaeological field methods, however, were not up to his public relations. They seem almost anacronistic in mid-20th century. Stirling's style belongs more to the century of Heinrich Schliemann and Flinders Petrie than to that of "scientific" archaeology.

Figure 16. Altar 5, La Venta, Tabasco.

Figure 17. Sides of Altar 5, La Venta, Tabasco.

The 19th century explorers' avarice for museum pieces often blinded them to contexts. Nonetheless the archaeologists of pre-scientific era, because of their uninhibited and freeswinging ways, were able to make discoveries that their more cautious counterparts of today would miss. In the 1940 season, a mere ten days were spent unearthing and photographing the monumental sculpture at La Venta, hardly time enough to determine the archaeological context of the sculpture by noting, for instance, associated geological or ceramic strata.

Yet it is to Stirling's eternal credit that he dared an undertaking of which others had been timorous. His bold, brash approach coincided perfectly with National Geographic editorial policy, resulting in generous, long-term financial support; an archaeologist without funds is a captain without a ship. Furthermore, through the Geographic the La Venta monuments were made known for the first time to a wide audience in clear reproductions. And while Stirling for the most part was personally indifferent to the problem of context or stratigraphy, he did employ an assistant to deal with what he obviously felt to be the more mundane aspects of an excavation.

Stirling's assistant for the 1939 season was W. C. Weiant, a chiropractor turned archaeologist. Weiant had been attracted to archaeology while practising his original profession in Zamora, Michoacan, Mexico in the mid-1920's. He took a degree in anthropology at Columbia University in 1937 and each summer he returned to Mexico where

he studied under Mexican archaeologist Alfonso Caso. He also worked with Mexican materials at museums in the eastern U. S. including, under Vaillant, the Saville collection at the American Museum of Natural History. Weiant (1952: 58), with a broad knowledge of Mexican artifacts, was nonetheless lacking in field experience. Eschewing stratigraphic excavations at Tres Zapotes, he collected ceramic materials that were dug up in mound-exploration, grave lots, or incidental to Stirling's excavations for large stone sculpture. In his report, Weiant (1943) arranged the material stylistically and noted outside influences upon it. For economic reasons, he chose to return to chiropractic after the field season.

Archaeologist Philip Drucker, a former cowhand, took over as Stirling's assistant the following 1940 season. In contrast to Weiant, he was familiar with field techniques, but lacking in knowledge of Meso-american ceramics (Drucker 1952: 259). Since receiving his doctorate from the University of California in 1936, he had worked almost exclusively with the ethnology and archaeology of the Northwest Coast Indians. At Tres Zapotes, Drucker concentrated on controlled stratigraphic excavation by digging his pits away from mound structures so that his columns of sherds, accumulated throughout the occupation of the site, would represent undisturbed layers. Given their different approaches, it is understandable that the results of Weiant and Drucker would not completely agree. This, in itself, would perhaps have been unimportant,

but, as we shall see, the chronological position of La Venta soon became central to the Olmec problem. The single ceramic horizon at La Venta to take on chronological significance had to be fitted into the much longer sequence at nearby Tres Zapotes.

While Drucker worked at Tres Zapotes, Stirling had made the first exploratory trip to La Venta. Stirling also visited the Cerro de las Mesas site where he discovered 12 stelae and 8 other monuments. The richness of his finds there made him decide to concentrate on the site during the following season of 1941.

Stirling's work at Cerro de las Mesas in 1940 and 1941 does not bear directly on the Olmec story except in that Initial Series dates without time period glyphs were found evincing the persistence of this manner of annotation for at least a half millennium after similar inscriptions were carved on the Tuxtla Statuette and Tres Zapotes Stela C. On the last day at Cerro de las Mesas, a jade cache was discovered in a spot that had been worn down by wheelbarrow traffic. Being pressed for time, Stirling (1941: 292) had the 782 pieces removed within a half hour! Among them glistened three Olmec heirlooms, all of blue jade: a canoe with two incised Olmec profiles, a macaw pendant, and a chubby dwarf.

The 1942 season saw Stirling once more at La Venta. This time he had Philip Drucker with him to make a study of the ceramic stratigraphy so that La Venta could be situated in time relative to the

Maya and other Classic cultures. Among the spectacular finds of this fourth field season was a burial chamber made of basalt columns in which "ancient bones reposed in a shroud of brilliant cinnabar amid masterpieces of the jade carver's art" (Stirling 1942: 636). In a line with the crypt a few feet away a bathtub-shaped sarcophagus with a slab top and a tiger mask was uncovered (Fig. 15).

More important to the resolution of the chronological problem, however, were the many bags of pottery sherds collected by Drucker and sent back to the Smithsonian Institution in Washington. Drucker had planned to analyze them there on his return from Mexico. But fate would not have it so. The U. S. was at war and Drucker entered the Naval Reserve. He would not see his sherds or field notes for three long years (Drucker 1952: IX). Not until 1947 would his preliminary study appear. Meanwhile the problem of La Venta chronology remained unresolved, though vehemently discussed.

The Views of Mexican Scholars

A storm of controversy had built up over how to interpret the Olmec finds at La Venta and elsewhere. Much of the argument arose out of a want of knowledge about La Venta chronology because of the neglect of stratigraphic study there. A round table sponsored by the Sociedad Mexicana de Antropología e Historia met in 1942 at Tuxtla Gutierrez, Chiapas expressly to consider the Olmec question. Stirling,

fresh from the field, reported on his jade discoveries. Trenchant debate characterized the meetings. At issue was the placement in time of the Olmec as well as its significance in the development of other Mesoamerican cultures such as the Maya. Mexican authorities, following Alfonso Caso, generally held that the Olmec was a "mother culture" flourishing before the Maya and other Classic cultures. U. S. scholars like Thompson, Stirling, and Drucker favored a Classic date contemporary with the Maya. A direct result of the meetings was a precise definition of the term Olmec in both its stylistic and historical aspects.

Amplifying his views expressed at Tuxtla Gutierrez, the Mexican historian Wigberto Jiménez Moreno published his incisive "El Enigma de los Olmecas" in September 1942. It showed that the problem was complex. Indeed, Jiménez Moreno (1942: 145) came up with five varieties of Olmecs: pre-, proto-, paleo-, neo-, and post-Olmecs. In its broadest sense the term Olmec means "an inhabitant of the rubber region," that is, of southern Veracruz and northern Tabasco. Thus it could be applied to a succession of peoples who have lived in this zone. The Olmecs to whom the 16th century chronicler Sahagún referred were but the most recent inhabitants of the area, Jiménez Moreno's post-Olmecs. The creators of the monumental sculpture at La Venta were the earliest or pre-Olmecs. Between these fitted a succession of other groups that other ancient Mexican historical sources labeled Olmec. The archaeological Olmecs were thought to be a Mayan

people who spoke a Mayan language that was a precursor of present-day Huastec.

At the same meetings in Tuxtla Gutierrez, the first comprehensive definition of Olmec style was put forward by Mexican artist Miguel Covarrubias. Covarrubias was well qualified to develop the analysis of style having been a highly successful illustrator, mural painter, and set designer. Born in 1904 in Mexico City, he was a syndicated cartoonist at 17. He received a Mexican government fellowship for art study in New York in 1923. He drew caricatures for Vanity Fair and the New Yorker, designed sets for the 1925 production of Shaw's Androcles and the Lion, and did book illustrations (New York Times, Feb. 6, 1957: 26). His interest in anthropology developed during two stays in Bali. His beautifully illustrated Island of Bali (1937) is more than a travel book, it is an ethnographical study as well. Covarrubias displayed his general knowledge of Pacific ethnography in executing six giant mural maps with the theme "Pagent of the Pacific" for the San Francisco International Exposition of 1939. When he turned his attention to the Isthmus of Tehuantepec in his own country another delightful combination of art and anthropology resulted: the book Mexico South (1946). Here he illustrated many Olmec objects, reviewed the Olmec problem, and presented Jiménez Moreno's views to English readers. His posthumously published Indian Art of Mexico and Central America (1957: 50-83) gives the best summary of the Olmec available

today. At Tuxtla Gutierrez, Covarrubias aligned himself with those who held the La Venta culture came before Classic Maya.

The Drucker-Weiant Exchange

In 1943 Drucker's study of Tres Zapotes ceramics appeared along with Weiant's. Both were important to the Olmec problem because the Tres Zapotes sequence was much longer than that at La Venta and apparently overlapped it. Whereas La Venta was essentially a site of one ceramic horizon, Tres Zapotes could be broken down into three phases: Lower, Middle, and Upper. Drucker (1943: 118-19) noted the affinity of the Lower Tres Zapotes horizon with the early Maya horizons Mamom and Chicanel at Uaxactun, San José I, and Playa de los Muertos in contradistinction to its low correlation of traits with the early cultures of the Mexican Plateau. Of Middle Tres Zapotes he said:

it is in essence a transitional period in which Lower patterns were both modified and elaborated, and a new fast-growing Polychrome tradition appeared. The linkages, insofar as they may be discerned, are with the preceding phase rather than with other regions (p. 120).

The Upper phase shows continued elaboration of polychrome types together with an influx of traits from Teotihuacan. It ends before the advent of Fine Orange and Plumbate wares and metallurgy all of which occurred in Mesoamerica just before A.D. 1000.

After his war service and a chance to study the sherd collection he made in La Venta, Drucker (1947) was to relate the ceramic

horizon there with Middle Tres Zapotes, which he had already placed with the early Classic Maya Tzakol period. This position was thought untenable by those who held that La Venta should have an earlier, Pre-classic date.

When Wauchope (1950) assigned La Venta to a Preclassic time rather than to the later Protoclassic and Classic, Drucker (1952) blamed Weiant for Wauchope's alleged misunderstanding. Weiant had divided the Middle Tres Zapotes horizon into an A and B phase. Weiant (1952: 57) answered the charge:

. . . when Drucker, despite his assertion that he does not mean to be unfair, creates the impression that just about everything I did in the field was wrong, and that my interpretations are either dubious or one-hundred percent erroneous, I am compelled to object.

The interchange, though lively, did little to clear up the fundamental question of when La Venta was active.

Stirling's Later Discoveries

The 1943 field season was the fifth for Stirling and the third involving work at La Venta. He was assisted this time by archaeologist Waldo Wedel of the Smithsonian Institution. Stirling and Wedel did not attempt to obtain a picture of ceramic stratigraphy, but rather the architectural sequences along the centerline of the main part of the site. Two large mosaic floors each in the form of a conventionalized jaguar mask were uncovered (Stirling 1943b). Wedel (Drucker 1952: 34-79)

noted the use of brightly colored clays, columnar basalt and the constant remodeling in building courts and mounds. In 1943, Stirling (1943: 321) still held that the La Venta culture "developed side by side with that of the Old Empire Maya, but it differed widely in most respects." As we have said, in this he echoed the view of most U. S. specialists, most of whom had worked almost exclusively in the Maya zone and had credited the Maya with having developed their advanced civilization in splendid isolation. The sophistication of the art of La Venta also argued against an early date.

Stirling spent the following season exploring the area between the Olmec and Maya zones--principally the State of Tabasco--seeking to mesh La Venta and Maya chronology (Stirling 1947). In this he failed. The westernmost Maya site, Comalcalco, offered nothing comparable to La Venta, nor did any other site he visited. For the first time in many years the Geographic carried no September article on Stirling's work of the previous summer.

However, the Fates were to smile once more on Stirling during the following season. In 1945, he returned to Izapa on the Pacific side of the Isthmus of Tehuantepec where he had worked in 1941. He then stopped at Piedra Parada in highland Chiapas. Back on the Gulf coast, he explored the Rio Chiquito region inland from the coast between Tres Zapotes and La Venta (Map, Fig. 2). At the small new settlement of Tenochtitlan the village schoolmaster showed him a collection of

antiquities from the surrounding area; it contained Olmec pieces. In addition:

Beside one of the town's houses, still in its original position, was a large stone figure consisting of an anthropomorphic jaguar seated on a human figure lying on its back . . . (Stirling 1947: 158) (Fig. 18).

The residents of Tenochtitlán directed Stirling to the nearby site San Lorenzo. Here another Colossal Head was discovered. Nine feet tall, the local inhabitants dubbed it "El Rey"--the king. It had been rolled down into a ravine where it lay face up. A tabletop altar about the same size as those at La Venta and of the same pitted basalt showed a La Venta theme: a figure seated in an arched niche and holding an infant. Other sculpture at San Lorenzo included a seated female with an infant in arms, a seated anthropomorphic jaguar four feet tall (Fig. 19), a three foot realistic head broken at the neck and wearing a flat headdress, a swimming duck with engraved designs, a headless figure with a cylindrical bar in its lap (Fig. 20), and a rectangular slab with carved celt-shaped depressions.

In 1946, Stirling reappeared at this promising site. Drucker, just back from the war, accompanied him. They cleared and mapped the largest mounds and plazas. Pottery collections were made from stratigraphic trenches, but apparently these were never studied; history repeated and Drucker was recalled to active duty in 1948. The

Figure 18. Monument 1, Rio Chiquito, Veracruz (after Stirling 1955).

Figure 19. Anthropomorphic jaguar, Monument 10, San Lorenzo, Veracruz.

Figure 20. Monument 11, San Lorenzo, Veracruz.

San Lorenzo ceramic material is now at the University of California at Berkeley (Drucker, Heizer and Squier 1959: 260).

The same ravine which gave up the Colossal Head of the previous season held four additional ones "better made and better preserved than any we had discovered on our previous explorations of La Venta culture" (Stirling 1947: 171). At the nearby site of Potrero Nuevo another jaguar, seated on a recumbent human was terribly broken (Fig. 21) and another tabletop altar was found. The altar showed two chubby dwarfs standing beneath the overhanging ledge, holding it with raised hands (Fig. 22). An elongated sitting jaguar and a seated human holding a serpent completed the monuments.

This was to be Stirling's last trip into Olmec country. Plaster casts of the Colossal Heads were placed in the National Geographic headquarters in Washington to flank "Explorers' Hall" in fitting tribute to the man who carried the tradition of the explorers of Mexico of the 1800's--Stephens, Seler, Charney, Holmes--into a century characterized by archaeological specialization and in which exploring was no longer quite fashionable.

Nuclear Physics and Tlatilco

Events outside the La Venta area were now to shape opinions on the Olmec. In the immediate postwar years at the University of Chicago, Libby and Arnold perfected a technique for measuring minute

Figure 21. Monument 3, Potrero Nuevo, Veracruz (after Stirling 1955).

Figure 22. Dwarf altar, Monument 2, Potrero Nuevo, Veracruz.

radiations. Around 1948, this resulted in the radiocarbon method for measuring the age of ancient organic specimens recovered by archaeologists. Carbon samples showed that in Mesoamerica the first agriculturalists--bearers of Preclassic culture--were settled in villages as early as 1500 B.C., much earlier than anyone had thought possible.

Throughout the years of Stirling's explorations, brickmakers at a yard just outside Mexico City had built up a flourishing business in antiquities having stumbled on an extensive Precolumbian cemetery. Miguel Covarrubias, a resident of Mexico City, regularly visited the Tlatilco brickyard to purchase pottery figurines and vessels. Most of these were typically Preclassic like those found by Vaillant in the 1930's at nearby sites Zacatenco and El Arbolillo. Covarrubias (1943) noted, however, that others were of Olmec style.

Because of the importance that this association held for the whole Olmec problem, Covarrubias urged that scientific excavation be undertaken at Tlatilco which would show the objects in context. Not until 1947 was an adequate program initiated. Under the direction of Covarrubias and Mexican archaeologist Rubin de la Borbolla, 203 graves were scientifically unearthed by January 1950. Among the features shared by Tlatilco and La Venta were: rare "rocker-stamped" pottery, tiger masks, figures of dwarfs, figures with "football helmets," Vaillant's type A figurines (Porter 1953: 31), use of cinnabar, miniature hematite mirrors on figurines, representations of adults holding

infants (Drucker, Heizer and Squier 1959: 258), and bearded figures (Piña 1955: Fig. 6).

Because Tlatilco could be interpreted in several ways, it gave rise to continuing debate. For example, Porter (1953: 52), who worked at Tlatilco, followed Drucker's view in saying Olmec influence there "must have come from a Pre-Classic Olmec culture which already possessed many features to be manifested later at La Venta." Drucker, himself, was writing his La Venta report while the Tlatilco explorations were in progress. He had seen only part of the Tlatilco artifacts (Drucker, Heizer and Squier 1959: 255) and while continuing to favor a La Venta-Tzakol correlation he was clearly bothered by seeds of doubt:

the Tlatilco-Olmec material which stylistically is surely referable to the La Venta-Middle Tres Zapotes horizon hints that one side or the other of our time scale is wrong (Drucker 1952: 255).

Proponents of a Preclassic situation of La Venta held that the Tlatilco investigations confirmed their view. Clearly more work was called for at the La Venta site: work that included the collecting of radiocarbon samples.

Far-flung Olmec Influences

Meanwhile, evidence was published of Olmec influence in Central America 400 miles from La Venta. Boggs (1950), prompted by Stirling's reports of La Venta reliefs, showed similar ones from

Las Victorias near Chalchuapa, El Salvador (Fig. 23). These lay even farther southeast than the reliefs of San Isidro Piedra Parada near Quetzaltenango Guatemala which had been shown by Thompson (1943: 111) (Fig. 23). Over 200 miles from La Venta in the opposite direction another Olmec relief would be turned up in 1960 by masons laying a patio floor at El Viejón, Actopan, Veracruz (Medellín 1960: 80-1, Pl. 9) (Fig. 24).

Related to the problem of influences is that of defining the more constricted Olmec heartland in which sites of the La Venta pattern are to be found. Stirling in ranging across the state of Tabasco in 1944 had found little resembling Olmec sites. In the dry season of 1953 Drucker and Mexican archaeologist Eduardo Contreras sought to determine the eastern and southern boundaries of the region by a survey both more restricted and more intensive than Stirling's. In 100 days they traveled overland with mules some 700 miles and located 80 sites. Starting on the east at Huimanguillo on the Grijalva River, they followed the major streams lying between the Grijalva and the Coatzacoalcos. Their impression was that the savannah country inland from the coast had prevented expansion of Olmec culture to the south and to the west.

[It] pushed only relatively short distances up the Playas, the Uzpanapa, and the Coatzacoalcos. Whatever the importance of its influences on other Mesoamerican patterns, the Olmec civilization seems to have been restricted to a relatively narrow strip of coast from about the Laguna del Carmen across the swampy lowlands and the rugged Tuxtla mountains to the mouth of the Papaloapan (Drucker and Contreras 1953: 396).

Figure 23. Relief carvings. Top, from Chalcuapa, El Salvador; bottom, from San Isidro Piedra Parada, Guatemala.

Figure 24. Relief from Actopan, Veracruz.

Not until 1955 did a new attack on La Venta get underway.

Heading it were Drucker and Robert F. Heizer, an archaeologist with many years of field experience in California. The nature of California's archaeological remains, such as shell middens, demands that the excavator pay close attention to subtle changes in stratigraphy. La Venta, because its architecture is not faced with stone veneer as Mesoamerican architecture generally is, required a similar approach if the building sequences there were to be understood. It also required the expenditure of much human labor over a long time. In the largest and most enduring operation ever carried out at La Venta, Drucker and Heizer worked from mid-January to late May 1955 using 50 laborers for 100 working days (Drucker, Heizer, and Squier 1959: 2). Too, a bulldozer lent by Petroleos Mexicanos shoved aside some of the 3 feet thick gray sand overburden on the Central Court.

Additional sculpture was unearthed including the unique Monument 19 (Fig. 25) and Offering 4, a group of 16 male figurines arranged in front of 6 celts as if representing a ritual. More important, however, is what was learned about La Venta architecture.

The largest feature at La Venta is a pyramid 420 by 240 feet and over 100 feet high (Map, Fig. 3). To the north lies a plaza flanked by two long low mounds running north-south for about 300 feet. Farther along, parallel rows of basalt columns 185 feet apart run another 135 feet. Closing the northern end of the "Ceremonial Court" formed

Figure 25. Monument 19, La Venta, Tabasco.

by the columnar wall is a large mound (A-2) in which Stirling found a tomb of basalt columns and a sarcophagus bearing an Olmec mask relief (Fig. 15). Both mortuary features were aligned directly with a line projecting north-south in the very center of the Court. Because this indicated that perhaps the builders of La Venta had purposefully aligned the site in a north-south direction--actually 8 degrees west of north--and had concentrated their tombs and offerings in the ground along the centerline, the 1955 excavators focussed there. In addition, small platforms enclosed within the Court were explored. Enormous trenches were dug through the structures down to the native soil to obtain profiles and show how the platforms and pyramids were formed. The bulk of the final report on La Venta consists of text describing detailed foldout drawings of such profiles.

Perhaps the most exotic discoveries were those termed "massive offerings." In 1943 Stirling and Wedel had uncovered two mosaic stone pavements in the form of tiger masks, one along the centerline just north of the principal pyramid and the other beneath a small mound east of the centerline. The 1955 careful excavation beneath the counterpart of the mound, a similar platform that lay to the west (Fig. 3), it was revealed that

Each of these inconspicuous platforms rests on top of the fill of a pit 62 feet on a side and originally dug to a depth of 26 feet. The fill consists of 28 layers of roughly shaped quarry slabs of green serpentine aggregating 1200 tons in all, an

elaborate 15 by 20 foot serpentine block mosaic mask representing the favorite Olmec deity, the jaguar, and layers of clays and unfired adobe bricks. This feature we call a "massive offering." There are two of these identical to each other, and they were both made at the same time (Heizer 1961: 44).

The trench profiles showed that La Venta had been built principally in four phases. Only after this sequence had emerged were charcoal samples collected which were related to the building periods (Drucker, Heizer, and Squier 1959: 264).

It was thought by Drucker and Heizer (1956: 367) that the earliest date would be around the time of Christ and that the latest would fall at about 5 centuries A. D. As it turned out, this was about a millennium too late.

The nine radiocarbon dates gave results interpreted as meaning that the construction at La Venta occurred from B. C. 800 to B. C. 400 (Drucker, Heizer, and Squier 1959). In their final report on La Venta the excavators say:

The C-14 dates presented here indicate that Drucker's estimate of the chronological position of the La Venta horizon was wrong; the Mayan specialists who placed it even later were likewise in error (Drucker, Heizer, and Squier 1959: 260-1).

At a point midway between the Olmec sites of Tres Zapotes and San Lorenzo another Olmec center, rivalling them and La Venta in size, was discovered by the Mexican archaeologist, Alfonso Medellín Zenil. The University of Veracruz supported Medellín's (1960)

excavations at Laguna de los Cerros from March 13 to May 8, 1960; 95 mounds were mapped, 27 monoliths discovered. Along the centerline of the site a small altar of the same form as those of La Venta and San Lorenzo was located, showing a characteristic projecting top and a figure seated in a niche (Fig. 26). A free-standing, larger-than-life figure wearing a breechclout and cape (Fig. 27) was unearthed as well as two other seated figures (Figs. 28 and 29). Medellín holds that some of these monuments were in association with Upper Tres Zapotes ceramics and, therefore, are of late Classic times.

The Problem Today

Medellín's placement of Olmec objects in Late Classic seems reactionary especially in view of the Mexican authorities' generally having championed a Preclassic chronological colocation for the Olmec even before the radiocarbon technique was developed. Medellín, however, questions not the early beginnings of the Olmec, but rather the early placement of the demise of the Olmecs. This part of the Olmec problem is still very much with us. Heizer (1961: 54), basing his view on the radiocarbon dates from La Venta, sees B.C. 400 as a likely date for the end of Olmec influence. Wigberto Jiménez Moreno (1957: 1031) opts for B.C. 200 after considering the comparative archaeology of the Mexican lowlands. George Kubler's (1962:xxxiii) situating the end of the Olmec at A.D. 300 for reasons of Olmec stylistic influences

Figure 26. Monolith number 5, Laguna de los Cerros, Veracruz.

Figure 27. Monolith 19, Laguna de los Cerros, Veracruz.

Figure 28. Monolith 11, Laguna de los Cerros, Veracruz.

Figure 29. Monolith 8, Laguna de los Cerros, Veracruz.

on the Maya is summarily dismissed by U. S. archaeologists (for example, Proskouriakoff 1963; Lathrop 1964). (The Spinden correlation, which would set back Maya Initial Series dates 260 years earlier than the more widely accepted Goodman-Martinez-Thompson correlation, would fit no better with the view of an Olmec-Maya overlap because it pushes back the date on Tres Zapotes Stela C the same amount.)

Of the early beginnings for the Olmec there now seems to be unanimity of opinion. This part of the Olmec problem has found solution. The termination date for the Olmec, however, is still in abeyance. Certainly all this argues for comparative radiocarbon dates from Olmec sites other than La Venta. It is hoped that the present study of the evolution of Olmec style will also help resolve this part of the problem.

The "Olmec problem" can be broken down into various sub-headings in addition to the one of chronology. Concerning the geographic point of origin of the Olmecs, for example, three conflicting views predominate. Covarrubias (1957: 76) thought the state of Guerrero the most likely; Piña Chan (1955: 106) the area where join the states of Oaxaca, Morelos, and Puebla; and Coe (1963a: 33) the Olmec heartland of southern Veracruz and northern Tabasco. Each of the three views can be argued against; the first two because the areas they favor are archaeologically terra incognita and the latter because monumental art can arise far from its ultimate source, as for example, did the giant heads of Easter

Island. Again, the study of Olmec art, especially in its evolutionary aspects, should throw light on Olmec origins.

A related subheading concerns the kind of society that produced Olmec art. One of the criteria for the beginning of the Mesoamerican Classic period is the development of great art styles, another is urbanization. Was there an Olmec civilization? Around this question two schools of thought have formed. One, of which Coe is a principal spokesman, sees the beginnings of Mesoamerican civilization with the Olmecs in the tropical lowlands. The other, championed by Sanders (1963: 973), holds that ecological conditions in the tropics would not allow civilizations to grow. It is only in the highlands with the discovery of irrigation that sufficient conditions are present to permit urbanization.

Since art reflects the society that produces it, insights into the character of Olmec society should be gained by an analysis of Olmec art. One of the purposes of this study is to seek an answer to the question of the nature of Olmec society. Before doing this, however, it is appropriate to examine the basic premises about art and style that will underlie such considerations.

CHAPTER II

ART AND STYLE

The word art has many meanings and covers many of man's creations. For the Olmec, this range has been narrowed by the ravages of time. Olmec music and literature are certainly forever lost, and therefore only the visual or plastic arts can be treated in a study of Olmec art. To qualify as art, a product need not be beautiful (as witness, for example, the work of Mexican muralists Orozco and Siquieros). Art can be analyzed without reference to beauty. It would be futile, at any rate, to apply Western cannons of beauty to an exotic style that developed in isolation from Old World traditions.

Munro (1949: 59), in a detailed analysis of definitions for the word art, lists one of these as being "the broad aesthetic non-evaluative meaning of 'art'." This is "the practice of any of the fine or aesthetic arts, or the product of such practices." Surely Olmec stone carvings resulted from the practice of the fine art of sculpture. No one would argue against this, so self-evident does it seem. Munro's non-evaluative meaning indeed appears to be so dispassionate as to have almost no significance. It is included here because it does lead to the question of why, as in the case of Olmec sculpture, does one know that

this is the product of the practice of one of the fine or aesthetic arts? Such knowledge is not instinctive, it is based on observation. What is observed is that a standard of technical excellence has been achieved that has allowed typical or fixed forms to be achieved (Boas 1955: 10).

Panofsky (1955: 10) has pointed out that: "A work of art is not always created exclusively for the purpose of being enjoyed . . . but . . . always has aesthetic significance (not to be confused with aesthetic value): whether or not it serves some practical purpose, and whether it is good or bad, it demands to be experienced aesthetically." According to Panofsky, all man-made objects have an "intention," and they may be either practical or works of art. Both practical objects and works of art may be further divided into "vehicles of communication, and tools or apparatuses" (p. 12). Among works of art, for example, "A poem or an historical painting is, in a sense, a vehicle of communication; the Pantheon and the Milan candlesticks are, in a sense, apparatuses" (p. 12). Olmec sculpture, as we shall see, is, in a sense, not only art but as well a vehicle of communication.

Obviously, many borderline cases are encountered by the investigator: aesthetically pleasing tools, for example, which show technical excellence and fixity of form. What was the primary intention of the tool-maker? Panofsky (p. 13) admits that the "intention" of the creators of artifacts, which determines whether their products are primarily practical objects or art cannot be arrived at absolutely.

In the first place, "intentions" are, per se, incapable of being defined with scientific precision. In the second place, the "intentions" of those who produce objects are conditioned by the standards of their period and environment . . . Finally our estimate of those "intentions" is inevitably influenced by our own attitude, which in turn depends on our individual experiences as well as on our historical situation.

Art and Anthropology

It is precisely in the domain of "the standards of their period and environment" and "our individual experiences as well as . . . historical tradition" that the anthropologist can best make a contribution to studies of art history, for this is the realm of culture. Culture to the anthropologist means "shared patterns of learned behaviour" (Gorer in Kroeber and Kluckhohn 1961: 108). This learned, shared behavior is "manifest in act and artifact" (Redfield in Kroeber and Kluckhohn 1961: 118). Such acts and artifacts, because they result from learning and sharing, are not capricious, but instead are part of cultural tradition. "Cultural tradition is the process by which in a given social group or social class language, beliefs, ideas, aesthetic tastes, knowledge, skills and usages of many kinds are handed on ('tradition' means 'handing on') from person to person and from one generation to another" (Radcliffe-Brown in Kroeber and Kluckhohn 1961: 92).

Art is a part of this cultural tradition. The meanings of its symbols and themes are learned and shared, just as language is

learned and shared. A person who babbles in an unknown tongue cannot function in a society; an artist who completely abandons traditional symbols can have no large public, no honest patrons, and no significant work in a society because, like the babblers, he cannot be understood. Whereas all culture change, including innovations in language and in art, takes place at the locus of interaction between individuals, no one individual is capable of reshaping his culture more than slightly.

This is the reason that art presents a history that can be studied. It is the reason that a style changes or evolves gradually and so may be traced through time. The history of art is the history of styles.

It is a commonplace that art production often is irrational or nonrational. If this be so, art nevertheless remains within the province of culture because culture embraces the nonrational. The idea that culture includes more than rational behavior marks a relatively recent advance in culture theory. Kluckhohn and Kelly (in Kroeber and Kluckhohn 1961: 97) expressed it emphatically: "By culture we mean all those historically created designs for living, explicit and implicit, rational, irrational, and nonrational, which exist at any given time as potential guides for the behaviour of men."

Kubler probably echoes the sentiments of the majority of his fellow art historians when he objects to the relegation by anthropologists of art to a mere aspect of culture. He speaks of one

anthropologist's view of culture as a "deity working his wonders to perform" with the implication that "art is mere illustration, and the art object is determined by its cultural context." He continues:

It remains the view of many art historians, however, that no theory of historical change can be valid if it fails to account for those indeterminate or mutational aspects of happening, of which important works of art have always been our clearest evidence. [We] suggest the absolute primacy of artistic activity as an exploratory mode of sensing the universe. This mode may be shaped by culture, to be sure, but it exists independently and outside many of the stock responses of cultural conditioning. In contrast to the anthropologist, who shelves art under culture, the art historian always wants to invert this order, by looking to artists for the clearest manifestations of those non-rational impulses toward change without which there can be no history. Art [transcends] its cultural framework whenever it is a prime object rather than a replica of another object (Kubler, comment on Haselberger 1961: 370).

We hold that most art production involves replication. Where change does take place in art, it is rarely if ever totus in toto, but for the most part involves regrouping of elements or slight additions to, and subtractions from them. Indeed, anthropological theory dealing with culture change is largely concerned with recombinations of already existing elements to bring about innovations.

Kubler appears to have shifted toward the tenents of anthropological theory of culture change when he wrote a year later of new evidence in the field of linguistics showing that languages change regularly and at a constant rate. This linguistic "drift" is explained by cybernetic theory as being "produced by cumulative change in the

articulation of sounds [and], can be related in turn to the interferences that destroy any audible communication" (Kubler 1962:60). In summary:

These recent developments in the historical theory of language require us to reconsider the position of works of art as historical evidence. Most kinds of historical happening are subject to incalculable interferences which deprive history of the scope of predictive science. Linguistic structures, however, admit only those interferences whose regularity will not interfere with communication. The history of things, in turn, admits more interferences than language, but fewer than institutional history, because things which must serve functions and convey messages cannot be diverted from these finalities without loss of identity.

Within the history of things we find the history of art. More than tools, works of art resemble a system of symbolic communication which must be free from excessive "noise" in the many copies upon which communication depends, in order to ensure some fidelity. Because of its intermediate position between general history and linguistic science, the history of art may eventually prove to contain unexpected potentialities as a predictable science, less productive than linguistics, but more so than can ever be possible in general history (p. 61).

In the present consideration of Olmec art, I seek to exemplify that changes in art are similar to changes in any realm of culture, that they are regular and constant, not haphazard and capricious. I concur with Kubler's view that art is a form of symbolic communication and that, in this, it is closely akin to language. Linguistic studies have received much attention from anthropologists. Quantities of data have been collected, yet no direct relationship of linguistic structure to socio-political structure has been shown. Perhaps no such relationships obtain. At any rate, the same problem in the field of art is probably much further from solution. At present, no evidence points

to a direct relationship between art style and socio-political structure.

Nevertheless, the evolution of art styles seems to be of the same nature as changes in language about which relatively more is known. The similarity holds because an artist cannot divorce himself from society. He must produce for a public. The themes he chooses must be conditioned by his clientel. This holds even today in complex societies. Socialist realism is produced in the Soviet Union because of the demands of the ruling hierarchy for propagandistic art. Expressionist and other non-representational movements of the West flourish because of a group of patrons that values novelty per se, and anything "new" as "good." The individualism of recent Western art movements, although in actuality not as particular as appears to the superficial observer, seems often to reflect a reaction against regimentation, discipline, standardization, mass production, and industrial precision, and in reacting it has been conditioned by society.

True, unique circumstances prevail today that have had unique consequences for art production. For the first time in human history examples of almost all surviving art styles are available to artists through museums and publications. Mass production technology combined with far-reaching distributive networks makes art available to a giant public in periodicals, motion pictures, phonograph records, and books. Differences in taste characterize different social classes, age groups, occupation and other interest groups so that as never before

many publics are available to the artist. Today in the U. S., for example, such diverse graphic styles are accommodated as those of Walt Disney, Norman Rockwell, Pablo Picasso, and Jackson Pollock.

The parallelism of art and language carries over into this heterogenous complexity; diverse "styles" of speaking have resulted from the isolation of certain social groups. Not only do scientists have special vocabularies and manner of speaking among themselves, but so do the military, advertisers, homosexuals, actors, and criminals. Writers have individual styles, but the literary style of an epoch, such as that of the Victorian novel, or of a movement such as that of the "beats," can be characterized. Art and language are alike in possessing style.

Style

Like the word language or the word culture, style has two different meanings. Depending on its context it may be seen as an absolute or a variable. What Mead said about culture applies as well to style:

Culture means the whole complex of traditional behavior which has been developed by the human race and is successively learned by each generation. A culture is less precise. It can mean the forms of traditional behavior which are characteristic of a given society, or of a group of societies, or of a certain race, or of a certain area, or of a certain period of time (in Kroeber and Kluckhohn 1963: 90).

As opposed to its generic sense, a style is a group of forms that is coherent to the beholder. Admittedly, the view of the beholder

is essentially subjective. What he discerns is a gestalt or configuration: an interplay of elements, a harmonious system of relationships. Each element is affected by all the others with which it is related. For analytical purposes, the formal components may be extracted from their context; obviously this becomes a dangerous and unprofitable pursuit if the observer does not keep in mind the original relationship of the parts under scrutiny. Later on in this study, elements of Olmec style are isolated and subjected to "scale analysis." These elements are qualities and their extraction may be thought of as the process of qualification.

Quantification, much used by archaeologists, seems of little value in the analysis of style. Perhaps it is the result of popular education that we think that tagging something with a number is the essence of scientific behavior and that numbers are somehow more real than qualities. It is often overlooked that in measuring the height, weight and proportions of an individual, we are left with an inadequate picture of the essential nature of the individual. This would apply as well to subjecting an individual to a battery of psychological tests. We do have an idea of the "true" or essential nature of our acquaintances, however, even though it is difficult to put this in words. Each individual--or book, or work of art--that we know is perceived as a configuration, as a gestalt. The configuration is not haphazard, it is organized. The elements of the configuration are affected by the manner of their

inclusion, that is, by their interaction with other elements. For example, a color in a painting is dark or light, dull or bright, depending on its relationship to the other colors in the painting. Art is only art because organization takes place within it. E. M. Forster (1949) has contrasted the order which is possible in art with the disorder which characterizes mankind's history and personal life. This is

the order which an artist can create in his own work . . . A work of art, we are all agreed, is a unique product. But why? It is unique not because it is clever or noble or beautiful or enlightened or original or sincere or idealistic or useful or educational--it may embody any of those qualities--but because it is the only material object in the universe which may possess internal harmony . . . It is the one orderly product which our muddling race has produced (p. 33).

The artist "creates through his sensitiveness and his power to impose form . . . Form alters from generation to generation. Artists always seek a new technique, and will continue to do so as long as their work excites them. But form of some kind is imperative. It is the surface crust of the internal harmony, it is the outward evidence of order" (p. 34).

Obviously the goal of perceiving a configuration or gestalt has been important to the development of science in general. For example, Köhler (1963) notes that "such eminent physicists as C. Maxwell, M. Planck, and A. Eddington have sometimes clearly stated that a purely analytical approach may not be able to do justice to all phases of physical nature. Actually, whole sets of physical processes

are never treated in what could properly be called an analytical fashion . . ."

At the same time, something about a particular style may be learned from analytical treatment. This course is not at cross-purposes with the configurational approach; both methodologies aim at insights into the nature of a style and the results of each should bear out the other.

In breaking down a style into component parts, several levels may be involved. One approach is that of A. L. Kroeber (1957: 30) who sees three ingredients of style:

First is the gross or objective subject matter dealt with Second is the "concept" of the subject, along with its emotional aura and its value toning. This is the factor that differentiates one portrait of a person from another painter's portrait of him This is still, in one sense content, subject matter, but it is subjective content, as felt by the artist; and in another sense it is form, the product achieved by the artist and the style And third is the specific, technical form given the work of art by the artist in his execution of it--his diction, rhythm, or brush stroke. With this ingredient we have fully entered into the realm of creativity, of aesthetic achievement.

How can these three ingredients be applied to a breakdown of Olmec style? Let us consider each of the three levels under a separate heading.

Objective subject matter. The mere indication of subject matter is insufficient for characterization of a style. In the Olmec, for example, much of the subject matter is identical to that contained in other Mesoamerican styles, especially the Maya. Subject matter,

then, must be seen in the context of the other aspects or ingredients of style before it can be placed stylistically.

Olmec subject matter is rather limited. Realistic humans, stylized jaguars, plus infinitely varied combinations of the two make up the bulk of Olmec themes. Covarrubias (1957: 56) thought that the humans conformed to "a curious aesthetic ideal," characterizing them as

plump men (very seldom women) with elongated, pear shaped heads artificially deformed and completely shaved, sometimes wearing headbands or a helmet with a chin strap. The heads have short noses with perforated septums, fleshy necks, heavy jowls, and prominent, stubborn chins. Their eyes are decidedly Mongoloid, almond-shaped or narrow slits between puffed eyelids. But their most characteristic feature is a large trapezoid mouth, known among archaeologists as the "Olmec" or "jaguar" mouth, with the corners drawn downward and a thick, flaring upper lip that gives them a despondent, fierce expression like that of a snarling jaguar these artists meant to represent a definite traditional human type of eunuchoid characteristics, with short well-made arms and legs, and with small hands and feet generally shown naked, and . . . always without genitalia, sometimes wearing a simple loincloth or a short skirt with an ornamental buckle in front. The strong feline feeling always prevails and is coupled with an infantile character and expression about the faces, as if . . . to represent a totemic prototype, half jaguar and half baby. One type of sculpture undoubtedly represents a jaguar cub ancestor, as so often its snarling mouth shows the toothless gums of a newly born baby.

The Colossal Heads (Figs. 35 and 36) which might well be memorial portraits of rulers, show no jaguar admixture and lack the tiger mouth. Still, all are plump with snub noses, thick lips and wear helmets. Many of the stone figurines show humans realistically, too. In contrast to the Colossal Heads, these generally are without helmets and

show pear-shaped heads resulting from artificial cranial deformation.

Other humans devoid of jaguar admixture are infants or dwarfs (Fig. 22). Often these display deformities such as a hunched back, a club foot, or a missing mandible. Covarrubias (1957: 57) guesses that they might represent chaneques, the impish dwarfs that have survived in Mexican folklore.

Jaguars are almost never depicted realistically in Olmec art and are often highly stylized (Fig. 19). The explanation seems simple: Olmec art did not aim at realism generally, but the technical skills for realistic depiction were brought into play in the colossal heads. Kubler (1962: chart, p. xxxiii) sees these as a late development within the Olmec style. Surely a high degree of social differentiation would have to have come about before portraits of individuals could be produced. Like the landscape, realistic portraiture is not found in primitive art. It is only with the beginnings of an urbanized or civilized society with social stratification that certain individuals literally "stand out" to such an extent that they are immortalized in the creations of their fellows. This in no way is inconsistent with the native artist having no desire to depict realistically a tiger or other non-human forms.

The peculiar combinations of human-jaguar, Covarrubias infers as "totemic" in origin. Totemism covers the wide range of beliefs about mystical relationships between human kinship units and a specific

animal, plant, or natural phenomenon. Such beliefs are still held by Maya groups today (Holland 1961). Universally, people living within a clan organization hold that they are descended from a primordial non-human ancestor.

That the Olmecs, or some part of them, thought of the jaguar as a totemic animal is inferred from the massive fragments of sculpture found by Stirling (1955) in the Río Chiquito area. Monument 1 from Río Chiquito (Fig. 18) was euphemistically described to the readers of National Geographic as consisting of "an anthropomorphic jaguar seated on a human figure lying on its back with crossed legs." The sexual union depicted there and in Monument 3, Potrero Nuevo (Fig. 21) most certainly was celebrated in Olmec myth as well as in stone. The puritanical orientation of some invading alien group in Precolumbian times could explain the fragmentation, as in Post-columbian times it prevented a realistic description of the sculpture. Puritanism is not purely a Posthispanic posture as the reading of the Popol Vuh and Chilam Balam will show. The most likely inference from the human-feline representations is that they spring from the ground of mythology which told of a totemic ancestor--a mighty jaguar.

The "concept" of the subject. Kubler (1962a:66) sees "two sharply contrasting modes of sculpture" in the Olmec. One, which "approaches cipher-like abstraction" he calls the "ideographic mode" because of its similarity to glyphic notation. Examples are the mosaic

floor, sarcophagus and Altar 1 from La Venta and the tiger mask on Stela C from Tres Zapotes (Figs. 15 and 30). The other mode he calls "veristic" by which he means the "most faithful possible transposition of appearances." The Colossal Heads and the wrestler from the Corona collection exemplify the veristic mode (Figs. 31, 35 and 36). Apparently, Kubler considers the modes as antipodal with most Olmec sculpture ranging between them.

One likely intention of the artist in following the veristic mode for the Colossal Heads, as we have mentioned, was to produce a realistic portrait of specific personages. An imposing look was generally incorporated with this likeness. Facial expression combined with the large size in the Colossal Heads to produce a commanding presence. One of the Colossal Heads is over 9 feet tall; three are over 8 (Kubler 1962: 67, f.n. 11). Stelae 2 and 3 at La Venta are around 11 feet high (Covarrubias 1957: 67-8) (Figs. 8 and 33).

As with all art created with the purpose of inspiring awe, the principal of frontality, although not in its extreme or total form, is adhered to in monumental Olmec sculpture. This is perhaps most obvious in Altars 4 and 5 from La Venta which show a large central figure facing out of a deep arched niche (Figs. 9 and 16). In reliefs, with few exceptions, partial frontality is the rule with the chest turned toward the viewer as described by Hauser (1951: 41):

Figure 30. Altar 1, La Venta, Tabasco.

Figure 31. "Wrestler," Corona Collection, Los Tuxtlas region.

Figure 32. Monument 13, La Venta, Tabasco.

Figure 33. Stela 3, La Venta.

Figure 34. Stela 3, La Venta (detail).

Figure 35. Colossal Heads.

In chronological order as inferred from scaling are, from top to bottom, Tres Zapotes 2, La Venta 1, La Venta 4, La Venta 2, and La Venta 3. San Lorenzo heads shown in following figure come after these.

Figure 36. Colossal Heads.

Preceded by the heads in the foregoing figure, and in chronological order as inferred from scaling are, from top to bottom, San Lorenzo 2, 5, 4, 3, and 1.

so that the upper part of the body is divisible by a vertical line into two equal halves. This axial approach, offering the broadest possible view of the body, obviously attempts to present the clearest and least complicated impression possible, in order to prevent any misunderstanding, confusion, or concealment of the elements of the picture. The attribution of frontality to a basic lack of technical skill may be justified to some extent, but the stubborn retention of this technique, even in periods in which there can no longer be any question of such an involuntary limitation of artistic purpose, demands another explanation.

In the frontal representation of the human figure, the forward turning of the upper part of the body is the expression of a definite and direct relationship to the onlooker . . .

The head is always in profile (except for the central figure of La Venta Stela 2 (Fig. 8), which is in such high relief as to be approaching sculpture in the round). Feet are shown in profile, and face the same way unless the figure is in repose. The moving leg is usually the rear one. Frontality "attempts to present the clearest and least complicated impression possible All courtly and courteous art, intent on bestowing fame and praise, contains an element of the principle of frontality--of confronting the onlooker . . ." (Hauser 1957: Vol. 1, p. 41).

There can be little doubt that the leaders of the La Venta center sought to overwhelm with the idea of their might both visiting pilgrims and, perhaps, viewers yet unborn.

Technical form. It is perhaps because he was a particularly sensitive artist that Miguel Covarrubias has given us the best analysis of the forms utilized by the Olmec sculptor.

"Olmec" art is the very antithesis of the formalized and rigid art of the highlands or the flamboyant baroque of the lowlands of the Classic period, both overburdened with religious symbolism and ceremonial functionalism. On the other hand, its aesthetic ideology is in the spirit of the early cultures: simplicity and sensual realism of form, vigorous and original conceptions. The "Olmec" artists . . . handled . . . forms with architectural discipline and sensitivity. They delighted in the smooth, highly polished surfaces of their jades, broken occasionally by fine incised lines to indicate such supplementary elements as tattooing, details of dress, ornaments, and glyphs. These lines are sharp and precise, soft curves and angular shapes with rounded corners . . . (Covarrubias 1957: 54).

Architectonic is perhaps the best one-word characterization of Olmec sculptural form. The Olmec altars resemble a rectangular house form. Olmec jade figurines could be called streamlined; indeed, their curved and highly polished surfaces are reminiscent of the modern automobile and the incised lines that break the surfaces seem to serve the same artistic function as the fine lines of chromium that accent the polished surface of the products of Detroit.

Summary

The above breakdown of Olmec art follows a tripartite scheme developed by the anthropologist A. L. Kroeber. Another anthropologist, Miguel Covarrubias, was extensively quoted in the characterization. The field of art is a proper place for anthropologists.

This chapter is an attempt to set forth the anthropological approach to art, an approach that is broad in that it can treat the art of any peoples living or extinct. Anthropology focusses on the role that

culture or tradition plays in art production. Moreover anthropology deals, in general, with the art of societies rather than with that of individuals. An analogy can be drawn from the similarities between art and what anthropologists have learned of language: both have styles, both evolve, in part, through "drift." An art style, like a language or a culture, can be studied as a configuration or can be segmented into components. The application of Kroeber's three levels of a style to Olmec art both demonstrates how a style may be broken down and provides the reader with an overview of the Olmec style.

CHAPTER III

INFERENCES FROM OLMEC ART AND ARCHAEOLOGY

The only available evidence for making inferences about Olmec society is the art and architecture of a long vanished people. An eclectic approach, combining theories from several fields of study, is here used to focus on the problem. What is learned of the Olmecs in one context may help to better understand them in another. Ethnology, archaeology, sociology, economics, and psychology all have man as their central concern and so, perhaps, each can tell something about the men of most interest here, the creators of Olmec art. In this hope, I have brought together such unlikely bedfellows as Robert Redfield, Pitirim Sorokin, Karl Marx, Emile Durkheim, and Sigmund Freud. I trust that the analogy holds that while one plank cannot stand alone, several leaned together soar high above the ground.

From the size, the subject matter, and the partial frontality of Olmec monumental sculpture the presence of a dominant social class was inferred in the previous chapter. But, art in the isolation of a museum can tell us little about its creators. Only within a social context can it be fully understood. Ethnographic accounts often attempt to show this relationship of art to society. Such efforts are valuable

and necessary because little is intrinsic to art that makes it either primitive or civilized.

The Redfield Continuum

One curator of primitive art, Phillip H. Lewis (1961: 236), tacitly admits to this confusion in defining his subject matter as the art produced by societies considered as typologically primitive. In other words, according to Lewis, an art object can be classified as primitive only if its provenience--its original social context--is roughly known. To characterize primitive society, he has seized upon Redfield's theoretical ideal typology of societies running along a continuum between extreme types. At the antipodes are primitive or precivilized society and urban society:

The primitive and precivilized communities are held together essentially by common understandings as to the ultimate nature and purpose of life. The precivilized society was like the present-day primitive society in these characteristics of isolation, smallness, homogeneity, persistence in the common effort to make a way of living under relatively stable circumstances . . . (Redfield 1953: 12)

Whereas:

. . . a society is civilized insofar as the community is no longer small, isolated, homogeneous and self-sufficient; as the division of labor is no longer simple; as impersonal relationships come to take the place of personal relationships; as familial connections come to be modified or supplanted by those of political affiliation or contract; and as thinking has become reflective and systematic (p. 22).

Lewis's construct may prove useful to the curator concerned only with what might be called "ethnographic art," but for the archaeologist, who must find his contexts underground, it is difficult to say much about the "common understandings as to the ultimate nature and purpose of life" held by the inhabitants of an ancient settlement. Nevertheless, the archaeologist can determine how small and isolated a community may have been, as well as make inferences to the homogeneity of a people from the homogeneity of their artifacts.

The classification of cultures developed by Beardsley and others (1956), in contrast to Redfield's, is suited to archaeological data as well as to ethnographic. At the same time Redfield's continuum and Beardsley's series (which overlies an implicit continuum) show polarities that are much the same: they go from a rural condition to an urban one. To differentiate cultures along the continuum, the criterion of community mobility was chosen by a group that met under Beardsley's chairmanship. Their continuum ranges from unrestricted wandering to complete sedentariness. The community patterns distinguished along the continuum are: "Free Wandering, Restricted Wandering, Central-Based Wandering, Semi-Permanent Sedentary, Simple Nuclear Centered, Advanced Nuclear Centered and Supra-Nuclear Integrated" (p. 135). "A 'community pattern' is the organization of economic, socio-political, and ceremonial interrelationships

within a community, and is largely synonymous with 'culture complex'" (p. 134).

The interpretation of the archaeological finds in the La Venta region by Drucker and Heizer (1960) leads us to classify the Olmec community pattern as differentially Simple Nuclear Centered--differential in that the permanent center, being ceremonial in character, is qualitatively as well as quantitatively at variance with the satellites. The Beardsley group assumed that archaeological cultures can be compared with ethnographic cultures and that, consequently, inferences are possible that have "functional and evolutionary as well as historical and descriptive significance" (Beardsley and others 1956: 133). Thus, for the Simple Nuclear Centered pattern, full-time occupational specialization typically based on heredity comes into being as does social stratification although organization based on kinship is still important:

The chief acts to some extent in his own interest or the interest of his class, and usually has power to coerce subjects, particularly as individuals or as members of the lower class. His power is related to the size and distinctness of the upper class Individuals or families of high status tend to live . . . in the permanent center in a differentiated community Religion is formalized and externalized in temples, ritual, prayers, and offerings. Sacrifice becomes a means of influencing the gods. A ceremonial calendar determines the time of ceremonies. Both increase in community size and specialization of religious ritual seem to be responsible for the allocation of part of the community to an audience role rather than the participation characteristic in Semi-Permanent Sedentary and in Wandering groups. Public ceremonies directed toward community goals (successful harvest, rainfall, victory

over enemies, etc.) predominate over those commemorating birth, puberty, and death. Gods become differentiated from ghosts and spirits, and priests from shamans. Ceremonial paraphernalia are elaborated (Beardsley and others 1956: 142).

Nothing in the Beardsley characterization is at variance with the archaeological findings at La Venta. However, we need not accept the picture as a reasonably faithful delineation of Olmec society solely on the basis of this typology; other theories have bearing for a solution of this problem. We will now consider some of these to see whether they offer support for the Beardsley plank in our theoretical construct.

Sorokin's Polar Types

Pitirim A. Sorokin, a sociologist, has tried to relate art forms to forms of society. The anthropologist A. L. Kroeber, after a study of Sorokin's theory, concluded that it could be incorporated into Redfield's folk-urban continuum. Kroeber (1963: 179) thought that the dichotomy of Ideational and Sensate forms of art described by Sorokin mirror the antipodes: Ideational forms reflect the rural condition and Sensate the urban.

Sorokin had ordered all art production of all ages by describing polar types between which all art would fit. His Ideational type transforms the invisible world into visible signs; it is transcendental. At its purest, it represents supersensory or superempirical subjects such as gods or spirits. In its impure state, it endows superempirical subjects with a visual resemblance to some empirical aspect as, for

example, in the depiction of allegorical figures; or the subject may be empirical, but the form symbolic as in geometric designs on North American Indian pots which symbolize animals. In general, Ideational art is static and done in a linear style.

Sorokin's antipode is visual or Sensate art. Exemplified by impressionistic painting, it is empirical or illusionary and its painterly style (the malerisch of Wölfflin) contrasts in its soft or blurred edges to the hard linearity of Ideational art.

Along the continuum fairly close to Ideational art there crystalizes out a category which conforms, in the main, to Olmec art. This is Sorokin's Idealistic. Greek art of the 5th century B.C. exemplifies it. It depicts not empirical reality, but an ideal form of reality. Individual fancy, so characteristic of the visual impressionists, has no place here. The earthly is ignored. Its figures are eternal and static, calm and serene. Lasting, traditional values are sought. Idealistic art differs from Ideational in having connections with the empirical and it differs from visual in that the empirical is limited to idealized traditional themes.

. . . The nonidealistic phenomena . . . are out of place in such an art. It passes by the prosaic, the debased, the defective, the common, the earthly. It does not see the baby as a baby, the old man as senile, the woman as womanish; what it sees is some general and perfected type of man. Therefore its babies are grown up; its old men are youthful; its women are manly--there is no sex in them . . . (Sorokin 1962: Vol. 1, 260).

The above passage brings to mind the grown up babies of Altar 5 at La

Venta and the manly women who hold them (Fig. 23) as well as the perfected men's faces of the colossal Olmec heads (Figs. 35 and 36).

What does Sorokin believe Idealistic art indicates about the social milieu from which it springs?

Since the Idealistic art has behind it, as its inspiration and soul, some great ideal, such an ideal or value is always the value of a genuine collectivity. It is not, and cannot be, mere individual fancy. It is logical, therefore, to expect that this value embraces within itself the collectivity in which the individual artists are only the leaders. Everybody strives to contribute what he can to such creation because the value is the common value of all. Hence the art of such periods tends to be stamped by the collective character of its individual artists. In this sense it is nonindividualistic, collectivistic, or "familistic" (Sorokin 1962: Vol. 1, 258-9).

. . . Idealistic art . . . has been in considerable degree the work of the aristocracy and nobility, great, chivalrous, noble, and idealistic, whether hereditary or not, whether in the form of the great Greeks who readily sacrificed themselves for the glory of gods and country at Marathon or elsewhere, or in the form of the feudal aristocracy at its apex (p. 683).

In fitting the Olmec settlement pattern of the La Venta region into Beardsley's scheme and the content of Olmec art into Sorokin's, in neither case are the examples polar. In both they lie along the continua seemingly closer to the rural end than the urban. This is a subjective judgement since Beardsley does not claim that the steps along his continuum are equal and since Sorokin's Idealistic type is any mixture of Ideational and Sensate.

Marx: Economics and Art

Karl Marx also stressed that we can learn much about a society from its art. Even without necessarily holding the Marxian view of the primacy of the economic factor, one can allow, as anthropologists generally do, the tenet that all factors in a society are interrelated. The manner of the interrelation, however, is open to question.

In the Marxist dialectic, history is seen as a struggle between the opposing tendencies of thesis and antithesis which become resolved at an ever higher level. Marx saw the material world as the ultimate reality with ideas being merely a reflection of it; Sorokin's view is just the opposite. For Marx the omnipresent conflict which makes for historical development is that between social classes. Owners of the means of production must defend their wealth and privileges from those who produce. Shifts in economic control are central to historical change; these can be abrupt or revolutionary since those in power do not often voluntarily relinquish their position.

Upon socio-economic factors, according to Marx, is erected a superstructure which includes the rest of culture. Art styles are thus included with the superstructure and are responsive to the socio-economic milieu. Art styles usually reflect, directly or indirectly, the interests of the ruling class. Thus a radical change in the hieratic art style seen in an archaeological context, say between adjoining strata, would likely reflect a social upheaval.

At the same time, elements of earlier styles can persist even under conditions of change.

Marxism emphasizes the role of environment, especially the socio-economic environment, in determining the main characteristics of art. Changes in it, as in the case of a revolution which redistributes wealth and power, tend to change all forms of cultural expression. The type and quality of art at any time are not due to supernatural inspiration or to innate racial superiority. Social conditions can provide themes and general directions to art, but there is always room for individual variation. They do not determine the specific details of a period or individual style. The precise ways in which genius will treat common themes can not be predicted or explained by purely socio-economic factors. But social conditions can release and inspire creativity, or the opposite (Munro 1963: 97).

Although Marxist theory has attempted to relate art to society it has done so, as can be seen from the above, only in very general terms. It can be criticized not only for this lack of specificity, but also because of its failure to develop. The promise has had no chance of fulfillment because of national political postures which have hindered the use of Marxist concepts in social science in the U. S. and have prevented theories based on new knowledge in social science from being incorporated into the Marxist system in the U. S. S. R.

The views of Miguel Covarrubias on the sociopolitical significance of Olmec art may be classified as essentially Marxist.

Covarrubias wrote:

The type of society of a vanished people can be determined by the character and personality of its archaeological remains. In the case of the "Olmecs," only an aristocracy obsessed with a rather fossilized religion and hunger for self-glorification

and having unlimited resources of labor could have accomplished the carving and erection of such great monuments, and particularly the transportation of enormous masses of basalt into an area so totally devoid of stone as the alluvial plains of the Isthmus. Two basic human types are often shown in "Olmec" art, perhaps corresponding to two different social classes of people who lived together: the squat, dwarfish, flat-nosed personages--vassals; and the refined, aquiline, and often bearded people--the elite. Furthermore, at Tlatilco the remains of the simple pottery-making peasants of Zacatenco culture are found together with elaborate "Olmec" objects, indicating that the early agriculturists came in contact with a more complex, urban type of people, shamans or magicians who in time became the intellectual masters, taking the first step toward the establishment of an aristocracy, a parasitic class of priests, and thus prepared the stage for the great theocracies of the subsequent period (1957: 77).

Covarrubias's Marxist bias shows in the phrase "parasitic class." Need an aristocracy be necessarily parasitic? The concept of a "parasitic class" or "leisure class" was given wide currency by Thorstein Veblen's The Theory of the Leisure Class (1899). Nevertheless, Veblen's pronouncements in this work cannot be taken as generalities that hold for all societies. As Mills (1959: 58 f. n.) has pointed out:

The Theory of the Leisure Class is not the theory of the leisure class. It is a theory of a particular element of the upper classes in one period of the history of one nation. It is an account of the status struggle between new and old wealth and, in particular, it is an examination of the nouveau riche, so much in evidence in Veblen's formative time, the America of the latter half of the nineteenth century.

It seems unwarranted and simplistic to dismiss the Olmec elite as a "parasitic class." They were the thinkers and the organizers of a

society that produced, under their direction, civic and religious architecture, public art and public works.

Today, in part because of the influence of Marx, few anthropologists or historians would argue that an inquiry into the means of production of a society is not essential to the understanding of that society. The most far-reaching economic treatment of the Olmecs has been carried out by Robert Heizer.

Heizer, like Covarrubias, was struck by the enormous work load in assembling materials and making the "mammoth offerings," pyramids, and monuments at La Venta. He saw the site as a manifestation of the emergence of a theocratic state. "The La Venta site, by reason of its age, isolated position, and restricted population-support area, constitutes the earliest specific example of a Preclassic priest-dominated society maintaining a major ceremonial center" (Heizer 1960: 221; cf. Heizer 1961, Drucker 1961). The area administered by La Venta, according to Heizer's inferences, was that adjoining the coast between the Coatzacoalcos and Tonalá rivers: a 350 square mile topographic region of low hills with an estimated population of 18,000 (Heizer 1960: 219). The economy of this area was based on the production of maize using slash-and-burn agriculture. Heizer follows Boas, Childe, Kroeber, and Wolf in observing that plant domestication was truly revolutionary since it allowed for the "production of surplus foods, and heavier populations which had more free time available

which might be diverted into non-subsistence activities and from which could develop specialization of skills" (Heizer 1960: 215). At the same time Heizer notes that the delicate ecological balance between population and available land can be easily upset under the conditions of the milpa system.

Harris has pointed out the fallacy in the concept of surplus production: it goes against the basic evolutionary tenet of the superiority of reproductive potential over productive ability. The population explosion is but the current expression of this doctrine.

The belief that specialization and stratification arise when the labor force produces more food than it needs cannot be reconciled with the fact that, largely as a result of malnutrition, the majority of the world's food producers have never survived beyond infancy or early adulthood. This malnutrition does not arise from a failure of the people concerned to provide themselves with enough energy to meet the demands of the minimum thermodynamic subsistence level, but rather from a failure to meet the additional requirements imposed by the sociocultural order, foremost among which are reproduction, the support of immature workers, and the support of a large nonfood-producing class.

Those who believe that a class of nonfood-producers arose when the food producers had produced more than they or their offspring needed for their own metabolic balance must show how neither the birth rate, death rate, abortion, infanticide, or emigration of food producers was influenced by food shortages over an extended period of time (Harris 1959: 191-2).

Therefore, had Olmec society suffered from endemic malnutrition (because of the supremacy of reproductive potential over productive ability) we know from both historical and current examples that this would not have precluded the channeling of their efforts into

nonsubsistence activities. If we assume that an elite of non-agriculturalists planned and directed the building of the ceremonial centers in the Olmec heartland we are still left with the question of how the elite convinced the food-producers that they should part with a share of their produce possibly even in the face of starvation. What amounts were involved? What methods along the spectrum leading from friendly persuasion to coercion were employed by Olmec leaders to bring this about?

Heizer (1960, 1961) has worked out a quantitative scheme of man-hours to account for the building of La Venta. Because in the tropic lowlands of Mexico rainfall is seasonal, agriculture can be practised only part of the year. The labor required for the assembly of materials and construction at La Venta would hardly have been applied at the expense of agricultural labor. Heizer's figures, admittedly highly conjectural, are on the order of 2,000,000 man days work. Spread over the 400 years of the La Venta occupation this would involve only 50 men working every year during the 100 day dry season (Heizer 1961: 47). Evidence indicates that construction at La Venta was carried out in spurts, but, in any event, the order of labor involved is the same and seems far from the "unlimited resources of labor" postulated by Covarrubias.

Surely the invention of agriculture and the eventual rise of ceremonial or urban centers are related. The economic underpinning

of agricultural production for urbanization appears to be universal. At the same time the widely held belief in the unitary causality in the the relationship--agriculture leading to the growth of cities--cannot be justified. Marxist theory has been important (aside from its obviously significant role as an ideological rationale in power politics) in widening the vista of historians to include economics. The means of production and the manner of distribution cannot be ignored in seeking a lifelike picture of a society. At the same time, however, the historian must keep in mind the weak point in Marxist doctrine: economic determinism. Sorokin (1928: 529) has this to say on Marx's theoretical position that the economic factor is primary and determines all others:

It is evident that such a conception cannot be accepted: factually, such factors as geographical conditions and biological drives inherent in man appeared and operated earlier than economic factors. Other social factors, such as intelligence, experience, religious ideas or superstitions, rules of taboo or mores, primitive art, activity devoted to what could be called ideal aims, play and so on, are found in the most primitive human societies known to us and operated as early as economic conditions.

To follow Engels and alter Marx's view "that the economic factor is exclusively sufficient to explain all historical and social processes" so that the economic factor becomes "only the principle factor side by side with which there are some other less important factors", according to Sorokin, is not to escape all difficulty:

Marx and Engels did not even attempt to give any method for measuring the importance or efficiency of various factors, neither did they give any indices of the "primacy" of the

economic factor, nor any logical motivation of their claim. This is enough to contend that the pluralistic interpretation of the Marx-Engels theory strips it of any originality, and amounts to its abandonment (Sorokin 1928: 536).

More specifically, but following the same line of thought, David Kaplan (1963: 407) believes that generally Mesoamericanists have "overestimated the socio-political complexity of the pre-Hispanic cultures" by underestimating "the ability of many stateless societies, particularly chiefdoms, to engage in communal production on a fairly large scale." He argues that estimates, like Heizer's, of the number of man hours involved in large-scale constructions are useless for inferring the requisite sociopolitical organization unless we can determine as well how the expenditure of labor was distributed over time. Thus, large public works need not necessarily imply complex coercive political systems.

Kaplan defines a "chiefdom" as

a societal type with a political organization headed by a permanent office which has authoritative regulation over several local groups or communities, but which does not have an effective centralized monopoly of force. The chiefdom contrasts with the state, which unites on a territorial basis a number of local groups under the authority of an office or set of offices, in which is vested effective, centralized monopoly of the use of force (Kaplan 1963: 400).

Using ethnographic examples, he shows that social stratification does occur "in stateless societies in which the kinship system provides the framework for the system of ranking, the criterion of rank usually being geneological seniority" (p. 400). In such societies, the incentives

for construction of public works lie not so much in coercion as in "the desire for public approval and prestige, duty to the community, religious sentiment, pleasure and pride in craftsmanship . . ." (Kaplan 1963: 402).

While I feel that evidence such as that cited by Caso (1963) overwhelmingly favors a state organization for the Aztec at the Spanish conquest, I would agree with Kaplan that the archaeological evidence from the Olmec heartland and, generally, from the Formative and Early Classic periods all over Mesoamerica is not of a nature to allow the unassailable inference of coercive states. As Caso (1963: 875) remarks, the political organization of the Aztecs could have originally developed from a tribal organization and retained certain elements of it. The clans or *calpullis* and barrios of the Aztecs would represent survivals of ancient kinship-based organization. A similar survival has been found by Holland (1964) among the highland Tzotzil group of present-day Maya Indians. Here it takes the form of ancestor worship. The Tzotzils believe that their social organization structured along generational lines has a double in the spirit world. Each person in Tzotzil society has, in the spirit world, a counterpart in the form of a companion animal. The animal double of the person with the greatest political power in a Tzotzil community is thought to be a giant jaguar. This has obvious importance for our considerations of Olmec beliefs as reflected in their art.

We have already mentioned, in discussing the objective subject matter of Olmec art, that Covarrubias saw in the jaguar a totemic ancestor figure and that this view is supported by the statues from Rio Chiquito that show a jaguar copulating with a human.

Durkheim, Totems, and the Jaguar People

Emile Durkheim's concepts set forth the implications of totemism and, incidentally, add weight to Kaplan's view on the lack of coercion in pre-urban societies. Durkheim observed that no intrinsic quality of the totemic object is sufficient reason for the awe which it inspires. A social group "out of the commonest object, . . . can make a most powerful sacred being" (Durkheim 1961: 259). The Olmecs, in bestowing upon the jaguar the totemic aura, did choose a being whose intrinsic qualities inspire respect, but, as Durkheim showed, any object made to function as a totem becomes imbued with qualities outside itself. In a word, it becomes sacred as opposed to other objects which are profane.

In seeking the origin of the concept of sacredness, Durkheim utilized the data available to him from Spencer and Gillen's pioneer work on the Australian aborigines. He contrasted the two distinct phases in the life of Australian societies. Usually the population is dispersed in small groups as individuals go about the humdrum work of gathering seeds, roots and grubs, and of hunting and fishing. "The

dispersed condition in which the society finds itself results in making its life uniform, languishing and dull" (Durkheim 1961: 246). In contrast to the monotony of subsistence activities, gatherings of a clan or tribe for ceremonies are exciting. At such times the individual is transformed outside himself. "The very fact of concentration acts as an exceptionally powerful stimulant. When they once come together, a sort of electricity is formed by their collecting which quickly transports them to an extraordinary degree of exaltation" (p. 247). The exaltation felt by the individual on these occasions, when contrasted with the lethargy engendered by ordinary pursuits, gives a sacred quality to everything that takes place at the ceremonial gatherings. Thus, for Durkheim, the idea of sacredness has a social basis.

The totemic object can be the symbol of the clan or tribe or of whatever group comes together on sacred occasions. The object takes on a symbolic value which need have no relation to its intrinsic value. The symbolic value of the totem, then, is the result of the shared belief of the collectivity.

The behavior of the Australians, as interpreted by Durkheim, offers insights into the archaeological remains of La Venta and other Olmec centers. The shifting cultivation of slash-and-burn tropical forest agriculture presumably practised by the Olmec requires dispersed settlement and low population densities. For the system to work, the major part of the lands must lie fallow. The demographic

effect of slash-and-burn agriculture has been termed by Wolf (1959: 60) "strongly centrifugal." This means that as families become large, new family units must bud off to seek new lands. We would suppose that relatives so separated would want to see one another again. Furthermore, since alternating wet and dry seasons in the Olmec area perforce dictate an annual cycle in which agriculture can be practised only part of the year, we would further suppose that the dry season of enforced idleness from agricultural work would be the most convenient time for family reunions. With a continual budding off during a period of steadily increasing agricultural exploitation of the area between the Coatzacoalcos and the Tonalá rivers combined with a continuing desire of its inhabitants to reunite with kinsmen each year, possibly the most logical solution would be to settle upon one location at which to convene. This is how the La Venta ceremonial center could have come into being.

We trust that our speculations on the rise of the Olmec ceremonial centers will not be interpreted as economic or environmental determinism. We see it rather as an example of what Julian Steward (1955: 36ff.) has called "cultural ecology," which "introduces the local environment as the extracultural factor in the fruitless assumption that culture comes from culture."

Furthermore, we do not wish to imply that the Olmec farmers can be compared with Australian hunters and gatherers except in a very general way. Like the Australian, the native of the Olmec region would

have had a sacred time of the year to contrast with the humdrum period of work. During the sacred period, he left his hamlet and journeyed to the ceremonial center to unite with kinsmen. However, over the years, in contrast to the case of the Australians, population growth resulted in many of the ties of kin being forgotten and replaced by ties of group solidarity.

The jaguar, perhaps originally the symbol of a clan or of a tribe, became the sacred emblem of the group that convened at La Venta. The jaguar totem was worshipped, if Durkheim is correct, because it was the symbol of the collective itself. The Olmecs were, literally, what historian Wigberto Jiménez Moreno has called them, Tenocelome: the people of the jaguar.

The jaguar was not the only motif represented in the monumental stone sculpture at La Venta. Even more prominent than jaguars on the monumental sculpture are humans. Who were depicted and what was their relationship to the pilgrims who gathered at the ceremonial center?

As the sculptures show, these were no ordinary mortals. Their majestic bearing reminds us of Durkheim's postulation that a group need not be limited to animals, plants or inanimate objects in choosing a symbol of social solidarity:

. . . we see society constantly creating sacred things out of ordinary ones. If it happens to fall in love with a man and if it thinks it has found in him the principal aspirations that

move it, as well as the means of satisfying them, this man will be raised above the others and, as it were, deified. Opinion will invest him with a majesty exactly analogous to that protecting the gods . . . The simple deference inspired by men invested with high social functions is not different in nature from religious respect. It is expressed by the same movements: a man keeps at a distance from a high personage; he approaches him only with precautions; in conversing with him, he uses other gestures and language than those used with ordinary mortals. The sentiment felt on these occasions is so closely related to the religious sentiment that many peoples have confounded the two. In order to explain the consideration accorded to princes, nobles and political chiefs, a sacred character has been attributed to them . . . (Durkheim 1961: 243-4).

Quite possibly, the sculptures at La Venta of men made larger than life are a manifestation of the kind of deification treated by Durkheim. Perhaps the apotheosis grew out of the veneration of patriarchs in earlier times. Ancestor worship would have been part of the complex. At La Venta the foremost priest-ruler could have kept his distance from the ordinary pilgrim to the extent that he appeared to him only in gigantic stone sculpture. The jaguar could be at the same time both the totem of the Olmec group and the animal counterpart of their supreme leader.

Freud and the Psychological Factor

Whereas Marx dealt with the socio-economic factor in art, Freud and his followers examined the psychological factor. These two ways of viewing art are neither mutually exclusive nor contradictory. Certainly all art has psychological content as well as sociological.

Freudians view art much as they do dreams. Art can reflect repressed desires which have been frustrated in everyday life. Psychoanalysis shows "that art is not only a form of exposure, but also one of disguise, that the works of art are created not only as forms of self-revelation and communication, but also as a means of concealment, self-deception, and deceit, or, at most, of confusing but half the truth" (Hauser 1963: 105). To be completely understood, a work of art, then, must be explained not only in terms of what it proclaims to be, but of what it unconsciously is.

A Freudian would probably see in the emphasis on the tiger mouth in Olmec art a manifestation of the oral personality. From this it could be inferred that the typical or "modal" personality of the Olmec group was oral. Anxieties about eating are characteristic of the oral personality. Such attitudes appear in much of the surviving indigenous folklore of Mexico which seems blatantly oral in its fixation on eating.

However, little is accomplished by characterizing Olmec art as oral. It tells us about as much as the Freudians do in explaining "a social structure so extremely complex and historically intricate as capitalism by the simple and homogeneous proclivity to anal eroticism" (p. 78). It is too simplistic an explanation.

Another criticism of Freudians is found in the work of such anthropologists as Malinowski and Mead. Much of what Freud

considered universals does not exist where social structure differs markedly from that of 19th century Vienna. The Oedipus complex, emotional trauma in teen-agers, and inherent "female" mental traits are not found in all societies. Criticism by anthropologists has aided in the formation of social psychology, a field in which the individual is considered in reference to his culture and society. Art, being the creation of individuals, should be studied in this way, too.

Fischer's Socio-psychological Factor

A fascinating pioneer application of social-psychology to art analysis is that of J. L. Fischer. Fischer (1961) sought to relate art style and sociocultural conditions by the use of psychological factors. His data were the judgements on art styles made by the psychologist Herbert Barry III and the judgements on societies made by the anthropologist Murdock; the judgements were independently made with no thought of their being used in this way. Fischer's theory holds that an important causal factor in art forms is social fantasy as expressed by the artist. Social fantasy includes both the actual and desired situations of the society. From this, Fischer hypothesized the following:

- 1) Design repetitive of a number of rather simple elements should characterize the egalitarian societies; design integrating a number of unlike elements should be characteristic of the hierarchical societies.
- 2) Design with a large amount of empty or irrelevant space should characterize the egalitarian societies; design with little irrelevant (empty) space should characterize the hierarchical societies.

- 3) Symmetrical design (a special case of repetition) should characterize the egalitarian societies; asymmetrical design should characterize the hierarchical societies.
- 4) Figures without enclosures should characterize the egalitarian societies; enclosed figures should characterize the hierarchical societies (Fischer 1961: 81).

Each hypothesis was tested using the Fischer (R. A.)-Yates statistical test applicable to two independent samples of small size where all samples fall into two mutually exclusive categories. In all cases where the actual values were compared with the expected random ones, the probability of there being no correlation was less than 5 percent.

Fischer remarks in closing:

For an anthropologist, one of the most exciting possibilities that the study of art styles and social conditions opens up is the application to extinct cultures known only through archeology. If we can learn enough of the pan-human implications of art styles for social structure and the resulting psychological processes, we should eventually be able to add a major new dimension to our reconstruction of the life of extinct peoples known only from their material remains (p. 90).

Indeed, this is a hopeful prospect. While granting that the millennium may be long in arriving, it is stimulating to apply Fischer's hypotheses to Olmec art, to show what this implies about the society that produced it, and, finally, to judge how this fits inferences made about Olmec society using other criteria:

Fischer's hypothesis 1. Examples of repetitive elements and of integrating designs can be cited for Olmec art. Egalitarian status

seems implied by the plethora of identical stone figurines in private and museum collections. These are males with flattened, warped bodies which are nude or with a breech clout indicated by incision, but with never an indication of the sexual member. In proportion to the body, the head is high and, also, it receives more attention from the artist. Whereas body and limbs are treated summarily, the head, always pear-shaped, always jutting forward from the chest, is detailed. The group of sixteen figures discovered by Drucker and Heizer (1956: photograph p. 366) at La Venta hints that the figures were used in depicting ceremonies or, perhaps, other events as we today use toy soldiers. Marching soldiers, all from the same mold, depict the egalitarian sector of an army rank-and-file. The Olmec figures appear somewhat analogous.

One of the most characteristic traits of the Preclassic is the clay figurine. Only a few basic types are involved in the Valley of Mexico where they have been the most intensively studied. It is commonly assumed that these were produced by village-farming, egalitarian societies. Following Fischer, we would think that they do represent the artists' view of society. In the graves at Tlatilco delicately made figurines corresponding to Vaillant's type D are by far the commonest types in contrast to the other Valley of Mexico Pre-classic sites. Could the D types represent the idea shared by the elite interred at Tlatilco in regard to those who served them in life and

would continue to serve them after death, i. e., that the servants constituted a mass from which individual differences did not emerge?

As the embodiment of the opposite view--the proletariat view of the elite--we suggest Vaillant's type A figurine. These are widespread in the Middle Preclassic sites throughout the Valley of Mexico and are also found in the La Venta area. The physical type is unmistakably that depicted in the Colossal Heads of the Olmec heartland (Figs. 35 and 36). Furthermore, all type A figurines show a characteristic gritty clay which contrasts with the smooth clay of other figurines in the Valley of Mexico; this would lead us to assume that they were probably imports from the La Venta region where gritty clays are common in figurines.

Unlike elements, however, are integrated in relief carvings from La Venta. It would be expected that should evidence of a hierarchical society be forthcoming it would be manifested strongest in the heartland area.

Fischer's hypothesis 2. Nothing in Olmec art equals the horror vacui shown in Maya reliefs. Were the Maya, therefore, more hierarchical than the Olmec? We would suspect that they were, but on other grounds: the nature of their cities, the content of their art, their temporal relationship to the Olmec. Perhaps, then, this is another indication of the development of hierarchies over a long time leading to a highly stratified society with the Classic Maya empire

builders. In Olmec art uncrowded reliefs like Monument 13 (Fig. 32) contrast with crowded ones like Stelae 2 and 3 (Figs. 8 and 33). Indeed, we could order the reliefs from the Olmec heartland in regard to decreasing amounts of empty space. Would this reflect an increase in social stratification and be at the same time a guide to the evolution of Olmec art itself?

Fischer's hypothesis 3. Symmetrical design is characteristic of Olmec art, but asymmetry also occurs. The asymmetric Monument 13, which we mentioned above as showing a large amount of empty space, contrasts with Stela 2, which is rather symmetrical, but shows little empty space. Thus, as opposed to the criterion operating under hypothesis 2, a reverse order would obtain here. Likewise, the Olmec reliefs could be ordered using the criterion of symmetry and compared with ordering by other means.

Fischer's hypothesis 4. The enclosed figures in the niches of Olmec altars give every appearance of being from the top ranks of a hierarchy; their demeanor, their dress, their attitudes all establish this impression. Again, the Colossal Heads are isolated by their placement within the La Venta site (Fig. 3). Their enclosures or other forms of isolation are a further indication that the persons so depicted are indeed the rulers or directors of the Olmec centers.

Summary

The social and psychological theories that have been outlined and applied to the problem of the nature of Olmec society have produced inferences that agree rather strikingly. Thus, Sorokin's social theory of art and Fischer's psychological one resulted in similar conclusions about the fabricators of Olmec art. Olmec art was judged by stylistic criteria as falling under Sorokin's rubric of Idealistic art. Sorokin's characterization of Idealistic art as "nonindividualistic" and "collectivistic" matches Fischer's designation as "egalitarian" some of the properties shown by Olmec art. At the same time, both theories allow a hierarchical element in Olmec style. The latter element, in turn, relates to the Marxist view that, in general, art style mirrors the concerns of the ruling class. Since the ultimate origins of art cannot be other than socio-cultural and psychological, the agreement of social and psychological theories of art production is not to be wondered at. Such theories, if valid, will always be complimentary, never contradictory.

Archaeological and environmental studies show La Venta as a ceremonial center persisting for about half a millennium and surrounded by small agricultural settlements. The Beardsley formulation, based on ethnographic parallels, uses the word "chief" to specify the upper class leader of the differentiated nuclear center. Kaplan's concept of the "chiefdom" correlates with this. Kaplan also notes

that ties of kinship can be the basis for ranking in a chiefdom. I have presented the view that kinship ties could have exerted centripetal force to counter the centrifugal demographic effect of slash-and-burn agriculture as described by Heizer, Drucker, and Wolfe. In the process an explanation was extracted from Durkheim's writing of the desire for coming together of kinship groups that must spend most of the year apart to gain a livelihood. The reunion created an excitement so different from the experiences of everyday life that it came to be thought of as sacred as opposed to the secular realm of ordinary pursuits.

I agreed with Kaplan that in hypothesizing a coercive state to account for the ancient monuments of Mesoamerica, some authorities seem unduly influenced by present day conditions. Marx's idea that the fabric of history is conflict has probably contributed to this view. In an age characterized by coercion and secular religion, it is easy to forget that solid historical evidence tells of an age whose hallmark was the true believer. Gothic cathedrals rose, century after century, in Western Europe not because of coercion, but because religion was a real force and men wished to create an image of heaven here on earth. That religious belief is nonrational does not lessen its importance as a motivating force in history.

From the content of Olmec art it was inferred that the religion of its creators centered around ancestor worship and the jaguar totem.

The descriptions of ancestor worship and the belief in totems by contemporary highland Maya Indians, set down by our late friend William Holland, were offered as supporting evidence for this view of ancient Olmec religious practices.

Harris's ideas were introduced not only to show that the concept of surplus production is inadequate as a heuristic device, but to emphasize that even when faced with endemic hunger a people can expend their energies on the sacred sphere. La Venta for the Olmec was the embodiment of this sacred sphere. Here the farm families living between the Coatzacoalcos and the Tonalá came together at the regular intervals dictated by their annual agricultural cycle. They gathered to meet with relatives and friends and to feel the excitement of joining together in worship of their chief ancestors and the companion animal of these, the jaguar.

CHAPTER IV

THE GUTTMAN SCALE AND ITS APPLICATION TO OLMEC STYLE

The application, in the preceding chapters, of both socio-cultural and psychological theories of art production to the specific problem of Olmec art shows that the two positions are not contradictory or mutually exclusive, but rather corroborate one another.

For example, we have inferred that for Olmec monumental art socio-cultural factors were the principal determinants of its content: revered ancestors and their jaguar guardian spirits. At the same time, psychological determinants seem to account for certain aspects of the main themes, as in the isolation of the ancestor figures within a niche or the evident preoccupation with, and consequent elaboration of the mouth in the jaguar representations. These two factors, the socio-cultural and the psychological together can account for the ultimate or primordial origins of art. The socio-cultural factor is the contribution of society, the psychological that of the individual artist. Obviously the two factors overlap since society contributes heavily to individual personality. For the present, nevertheless, it appears more promising for gaining insight into art production to keep these two factors separate.

The Stylistic Factor

Whether considered separately or together, however, the socio-cultural and the psychological factors are set apart from a remaining ingredient of art, the stylistic factor. Its relation to the others has been set forth by Arnold Hauser (1963: 126):

. . . besides the factors rooted in social reality or determined by the desire for self-expression, there is the whole apparatus of the craft, of instruments that are gradually and progressively perfected, as in any other technique. This apparatus has its own history, which is on the whole one of continuous progress attributable to immanent causation. Though the production of these instruments is not altogether independent of the general conditions of life, and is subject to interruptions and regressions, it is still quite reasonable to speak of an autonomous development here . . . even the formal and representational elements in art manifest certain intrinsic developmental trends independent of the circumstances and aims of the particular artist; such trends, however, are dominant only for a period and may at any time be reversed.

This, then, is that factor in art akin to linguistic drift. Each individual artist must necessarily confront the art production of the immediate past and leave his image upon it. Under an apprenticeship system, such a confrontation is so gradual that it might better be called a blending of artist with his art. It is characteristic of societies near the rural pole of Redfield's rural-urban continuum that its members are tradition minded, that they do not ordinarily question the status quo. From this, it might be suspected that in a society like the Olmec, just emerging from its homogeneous state, there would be a strong sense of tradition among its artists and that,

consequently, the stylistic factor would be important to an analysis of Olmec art because within it significant changes could be observed.

Isolating the Stylistic Factor

Can the stylistic factor be isolated from the socio-cultural and psychological factors? I think that it can. In artistic change through time, the stylistic factor embraces those changes which are most regular and consistent. Dress style offers an example of such a change. In their study of dress style, Richardson and Kroeber (1940) measured dimensions of women's dresses for the U.S. as recorded for 150 years. Beyond a certain width, a skirt becomes unwieldy, and it restricts movement when made narrow. Thus there are two dimensions between which skirt width must fluctuate. The same could be said of the dimensions of automobiles. (At present we are observing a shrinking of what were the longest and widest models probably because their unwieldiness has become too onerous to be compensated by the status feelings allegedly felt by the owner.) At any rate, any stylistic form when repeated or copied can either gain, lose, or remain stable in any dimension. What Richardson and Kroeber showed for several dimensions in dress was that such changes take place progressively. Changes in dress dimensions created a 100 year cyclic fluctuation between the possible extremes in each.

In their study, Richardson and Kroeber could avail themselves of fashion magazines and catalogues each bearing a date. Tatiana Proskouriakoff (1950) in her ingenious study of changes in ancient Maya fashions and art could make use of the dates in a relative chronology that appeared on stelae with the costumed Maya personages. In the review of the history of the Olmec problem it was seen that chronological attributives of individual pieces of sculpture are virtually unknown. This lack complicates the problem at hand: the discovery of those attributes of Olmec pieces which embody the stylistic factor. The solution of the problem of the change in the stylistic factor will result in the ordering of the individual pieces of sculpture in a relative chronology. The two puzzles are inextricably bound because stylistic fluctuations take place over long time spans. The determination of the top of the time scale of relative sequence, however, remains a separate problem.

The inherent consistency and regularity of the stylistic factor distinguishes it from the socio-cultural and psychological factors of style. This difference not only sets the stylistic factor apart, but offers the possibility of its isolation. The discovery of the regular and consistent elements in an art style is the discovery of its stylistic factor. But how can such elements be detected?

A consistent and regular change in one dimension such as height can, of course, be scaled; or rather, any disparate group of a

single category of objects can be arranged according to height. But how can this difference in individual heights be interpreted as function of time? How can changes in one dimension be correlated with changes in another? How can qualitative changes be correlated with quantifiable ones?

The Guttman Scale

Obviously, qualitative observations are essential to the analysis of art style. In some cases, quantitative observations may be important to this end as well. To arrange individual pieces in a developmental sequence by means of both kinds of observations and avoid subjectivity at the same time, the method which seems to hold the most promise is that outlined in 1944 by Louis Guttman. Developed by Guttman and his associates for the purpose of investigating the morale of United States forces in World War II, it has since been applied widely in the field of sociology (Freeman and Winch 1957). Only recently have anthropologists begun to apply it to specific problems (Goodenough 1956, 1963; Carneiro 1962, 1963).

Essentially, the successful application of the Guttman analysis results in the ordering of qualitative or quantitative data into a configuration called a "scalogram." If data can be so ordered, they are seen as the expression of a single underlying variable.

The stylistic factor in art, which might more realistically be named "stylistic drift," is, as mentioned above, theoretically a single underlying variable, the evolution of any art style. For this reason the Guttman method of scaling can be applied to the present problem of isolating the elements of drift in the Olmec style. Implicit in any meaning of the word drift is the passage of time. Only through time can the expression or function of stylistic drift be observed. Thus any Guttman scale constructed of the elements of Olmec style and accounted for by the underlying variable of stylistic drift, will be a diachronic expression showing steps in artistic change over time. Generally, sociologists have used the Guttman scale to uncover synchronic variables such as general attitudes. The application of the Guttman scale by Carneiro (1962; Carneiro and Tobias 1963), however, has led him to infer a general development through unilinear evolutionary stages for all societies and, therefore, is diachronic.

My scope is much more limited than that of Carneiro; I focus not on mankind as a whole, but on a single art style left to us presumably by one culture. Any sequence we may derive will probably better fit multilinear than unilinear evolutionary theory.

Kubler's Sequence for Olmec Heads

One of the basic uses of Guttman scale analysis is to check the validity of a hypothesis holding that several items are the

expression of a single underlying variable (Goodenough 1963: 240). A hypothesis about Olmec art that lends itself to such testing has recently been set forth by art historian George Kubler (1962a: 67), who felt that the Colossal Heads of the Olmec heartland show a definite developmental sequence:

The ten heads show a clear development through two, and possibly three, generations of sculptors, working with stone tools, repeating the same theme with increasing skill and power. Two heads are almost spherical, and nearly devoid of animation: Tres Zapotes and La Venta I. The first seems arbitrarily rotund, with the features protected from accident by the beetling projection of the helmet across the brow and along the cheeks. The eyes are rimmed with heavy borders, and the eyeballs have an extremely convex curvature. The ears are abstract ciphers. The expression is grim and hard, without the supple modelling of all the other heads. La Venta I is also spherical, but the helmet meets the face in a less harsh line. The modelling of lips and eyes, though puffy, is more vivacious.

A second group of four is distinguished by parted lips, communicating an expression of speaking animation. Two in this group are spherical, and two are long-headed. The long heads (La Venta 3 and San Lorenzo 2) are more lively than the round heads (La Venta 2 and 4). La Venta 3 has deeply shadowed eyes and lips, suggestive of emotional tension, as in Greek sculpture under the influence of Scopas. The round heads (La Venta 2 and 4) are perhaps more animated in the open mouths, but the total effect of an inner emotional state is less apparent.

The final group consists only of heads from San Lorenzo (Nos 1, 3, 4, 5). Only San Lorenzo 3 is round-headed. All four have the iris incised upon the eyeball, in a commanding expression of focused gaze. All are like ideal portraits expressed in firm flesh, heavy muscles, and articulated profiles. An effect of majestic willpower and discipline is achieved by studied proportions and contours, in a composition of idealized physiognomic parts.

This sequence places round heads of grim aspect earlier than long heads of majestic expression. The intermediate group of long heads and round heads is characterized by parted lips. Tres Zapotes antedates La Venta, and San Lorenzo is terminal in the sequence.

Inadvertently, Kubler has overlooked the Colossal Head now in the plaza at Santiago Tuxtla, Veracruz, but which most probably originated in Tres Zapotes (Smith 1963: 128). The inclusion of Tres Zapotes 2 head seemingly would not alter Kubler's formulation since it appears similar in all respects to the earlier-known Tres Zapotes head.

Kubler (1962a: 67 fn. 12) acknowledges that his hypothesis "rests only upon analogy with similar changes elsewhere, as in Greek pediment sculpture of c. 550-450 B. C., or early Gothic portal figures in northern France of c. 1140-1250." The feasibility of such an analogy strains the credibility of Heizer (personal communication), and I feel secure in projecting such skepticism onto many other New World specialists. I propose not merely to give a broader foundation upon which the Kubler hypothesis may rest, but to prove, by means of the Guttman scale, the correctness of the evolutionary sequence for the Olmec Colossal Heads set forth by Kubler.

In sociological applications of the Guttman scale, the populations under study typically are groups of people, such as college students, war veterans, teachers in public elementary schools in New York City, but for statistical studies a population may be defined as "a complete set of objects" (Guttman 1944: 141). It is generally not

feasible in sociology to elicit opinions from all members of a population so a representative sample is tested instead. In the present case our population consists of all of the Olmec Colossal Heads known archaeologically. Possibly some remain hidden and unearthed. Should this be the case, it may be argued that those discovered comprise a random sample of all such examples. Theoretically, our statistical universe takes in a complete set of the attributes of our objects. Such attributes may have any size correlation from zero to unity. Kubler's hypothesis states that three such attributes, facial expression, head-shape, and eye-type show a unitary correlation. Implicit in Kubler's statement is that the underlying variable is regular and consistent stylistic change through time.

The Guttman Scale Applied to Kubler's Sequence

As a first step in setting up a Guttman scale we may extract from Kubler's statement, quoted above, the essential attributes of the Colossal Heads and put them in tabular form. A plus (+) sign is used to indicate the presence of an attribute, and a minus (-) sign its absence. It should be noted that non-anthropologist Kubler does not intend by the term "long-headed" to mean dolicocephalic, but rather a long or rectangular face as opposed to a round one. The characteristics we list are those he holds as being later than their complements (Table 1).

The traits and Heads are set down in the order that Kubler has mentioned them. This is not random ordering, however, since he is speaking in general terms of a chronological sequence. In rearranging the table according to the Guttman procedure, two rules are followed: (1) the most common attribute is placed at the top and the least common at the bottom and (2) the Heads possessing the least attributes are moved to the left and those showing the most to the right. The two shifts result in the configuration of Table 2.

This is a scalogram in that the pluses and minuses manifest a definite pattern with the single exception of a minus for long-headedness for San Lorenzo 3. Carneiro (1962: 153) has characterized a scalogram in which no item is out of place:

This pattern has the appearance of a regular set of stair-steps and constitutes what is known as a perfect scale. If a set of items plotted against a sample of units from some population can be made to arrange themselves in this way by following the aforementioned rules, that set of items is said to be scalable. If a set of items cannot be made to assume this stair-step pattern--or a reasonably close approximation to it--those items are not scalable. It must not be thought that the emergence of a scale is simply an artifact of manipulation. Scaling as an attribute is either inherent in the data or it is not. Rearrangement . . . according to the stipulated rules merely brings it out; it does not and cannot create it.

Objectivity has been sought in the above formulation by adhering strictly to Kubler's characterization of the Colossal Heads. Kubler certainly was not thinking in terms of scalograms when he wrote of this possible sequence. Carneiro (1962) seems to be the first

Table 1. Kubler's characterization of Olmec Colossal Heads.

Traits	Colossal Heads									
	Tres Zapotes	La Venta 1	La Venta 3	San Lorenzo 2	La Venta 2	La Venta 4	San Lorenzo 1	San Lorenzo 3	San Lorenzo 4	San Lorenzo 5
Long-headedness	-	-	+	+	-	-	+	-	+	+
Iris indication	-	-	-	-	-	-	+	+	+	+
Animation	-	-	+	+	+	-	-	+	+	+

Table 2. Scalogram ordering of Kubler's Characterization.

Traits	Colossal Heads									
	Tres Zapotes	La Venta 1	La Venta 2	La Venta 4	La Venta 3	San Lorenzo 2	San Lorenzo 3	San Lorenzo 1	San Lorenzo 4	San Lorenzo 5
Animation	-	-	+	+	+	+	+	+	+	+
Long-headedness	-	-	-	-	+	+	-	+	+	+
Iris indication	-	-	-	-	-	-	+	+	+	+

to see the diachronic implications of scalograms. The present study appears to be the first application of the Guttman scale to a problem of stylistic evolution. Its application to analysis of change in art seems both promising and limitless.

Refinement of the Sequence

With an almost complete set of photographs showing each of the Colossal Heads full-face and in profile, I have endeavored to refine the sequence of Kubler. A front view was lacking only of Tres Zapotes 1 (as a substitute the photograph in Stirling 1939: 185 was used for making measurements). Profile views were missing for Tres Zapotes 1 and La Venta 2. The gross dimensions of the heads appeared too capricious to be significant. What did appear to be meaningful were the proportions of the individual heads.

Our methodology consisted in enlarging each photograph, whether full-face or profile, to a standard size. From the enlarged pictures three measurements were taken of each head where available: height, depth, and width. Slight adjustments were made for photographs not directly full-face. Because of the aberrant shape of San Lorenzo 3, wide at the temples and narrow at the chin, a measurement for width was not taken for it. From these figures calculations were made of two items, the width of each face in relation to height (h/w) and the depth of each head in relation to height (h/d). The results of this procedure are shown in Table 3.

Table 3. Ratios of Olmec Colossal Heads

Colossal Head	height/width ratio	height/depth ratio
Tres Zapotes 1	1.10	--
Tres Zapotes 2	0.99	0.82
La Venta 1	0.92	1.05
La Venta 2	1.24	--
La Venta 3	1.27	1.70
La Venta 4	1.20	1.26
San Lorenzo 1	--	2.30
San Lorenzo 2	1.51	1.80
San Lorenzo 3	--	1.71
San Lorenzo 4	1.47	1.56
San Lorenzo 5	1.28	1.49

For the purpose of explaining our next step, those numerical values obtained for each h/w ratio and for each h/d ratio are called x values. The x values for the h/w ratio may be visualized by plotting them along a straight line. The line functions as a yardstick on which the lowest value is that of the lowest h/w ratio and the highest value is that of the highest h/w ratio. Ranging between them, the remaining h/w values are set down on the straight line of the scale at distances in proportion to their numerical distance from the ends.

Placed in this manner along a straight line, the h/w values are seen to form three clusters. Guided by these clusters, the line is divided into three segments or intervals. Each segment constitutes what may be called a y -variable. It is observed that these divisions are not equal intervals as on a calibrated scale. The properties of the values which can be fitted to a Guttman scale are illustrated by the following diagram in which the tripartite division of the line is shown along which the x values for the h/d ratio are plotted. The y variables need not be equal intervals. Every x value is smaller than any x value within the y interval to the right of its own. Each y variable is said to be a single valued function of the x variable. This means that for each variable x there corresponds a single value of y . At the same time, for the same value of y there can be two or more values of x . In other words, if $\underline{m}$ is the number of our y values and $\underline{n}$ the number of our x values, we must satisfy the condition in making a scale that $\underline{m}$ is equal to, or less than $\underline{n}$ ($\underline{m} \leq \underline{n}$).

The interval y_1 includes all values below 1.15, y_2 embraces those from 1.16 to 1.35, and y_3 those above 1.36. Since $\underline{m} = 3$ and $\underline{n} = 9$ the condition $\underline{m} \leq \underline{n}$ is satisfied.

The numbers in the height/depth column of Table 3 may be plotted along a line in the same manner and this line, too, can be split into three divisions which, again, follow the clustering of values along the line:

Here the intervals are: $y_1 = 0.82-1.40$, $y_2 = 1.41-2.00$, and $y_3 = 2.01-2.30$.

Calling the intervals y_1 , y_2 , and y_3 is arbitrary. They could just as well be tagged A, B, and C or X, Y, and Z. The same symbols are used for the divisions of all the continua described here purely for reasons of convenience. Just as the same symbols of plus and minus signs were used to characterize all of the items in Tables 1 and 2, the present use of the same symbols is employed merely to better observe the pattern of the resulting scalograms.

Qualities of proportion for the Colossal Heads, then, may be expressed numerically in the form of ratios of height to width and height to depth. Other qualities may be scaled even though they have no numerical values. Kubler theorized that the expression shown by the Colossal Heads evolved as did the heads in Greek pediment sculpture and Gothic heads of Portal figures. The evolution of facial expression in the Colossal Heads may be visualized by thinking of a straight line

which, like the lines in the preceding diagrams, expresses a continuum. The biological concept of micro-evolution treats changes in organisms that are analogous to those accounted for by the stylistic factor in art: these are continuous changes which may be conceptualized as being linear. As with the preceding linear representations the point at which divisions are placed along the line is fairly arbitrary. Following Kubler's characterization of the facial expression of the Colossal Heads, the continuum represented by a line is divided into three segments: heads devoid of animation, heads with parted lips in speaking animation, and those of commanding or majestic expression. For the purpose of scaling, values of y_1 , y_2 , and y_3 , respectively, may be assigned to these expressions.

Still following Kubler, the Colossal Heads may be divided on the basis of eye type. Our photographs show what I consider three legitimate types: eyes without an iris, those with a slight indication of an iris, and those with the iris manifestly apparent. These types are tagged y_1 , y_2 , and y_3 , respectively. As Kubler notes, his final group of four heads from San Lorenzo shows the iris. My observations are that, in addition, San Lorenzo 2 and the La Venta heads show the iris although not as patently as San Lorenzo 1, 3, 4, and 5. (La Venta 3, because of its worn condition, cannot be appraised.)

Four items, then, are hypothesized as manifesting evolutionary changes within the stylistic factor: width, depth, facial expression, and iris indication. The values I have assigned for these in each Colossal Head may be placed in a table (Table 4). The order of the heads in Table 4 is presumably random in that it is that in which they were discovered archaeologically.

As in the more simple example, the table must be rearranged according to the same rules. In this case, the heads with the most y_1 ratings are on the left and those with the most y_3 ratings are on the right; the y items are rearranged so that the item with the most y_1 's is at the top and that with the most y_3 's is at the bottom. This results in the scalogram shown in Table 5.

The rearrangement in Table 5 is a perfect scale: all y categories form solid blocks and a characteristic stair-step pattern manifests itself between the blocks of y_2 's and y_3 's. This means that the characteristics tested do not occur randomly, but are patterned and, therefore, are meaningful. Whatever explains the scalability of the items in the present case I infer that the scale is an expression of sequential development through time involving the stylistic factor. The order of the heads in the scalogram is, therefore, a chronological one, what archaeologists call a seriation.

The question remains as to which end of the scale is closer in time to the present. Kubler answered this by holding that the serene

Table 4. The Refined Characterization of Olmec Colossal Heads

Traits	Colossal Heads										
	Tres Zapotes 1	Tres Zapotes 2	La Venta 1	La Venta 2	La Venta 3	La Venta 4	San Lorenzo 1	San Lorenzo 2	San Lorenzo 3	San Lorenzo 4	San Lorenzo 5
Width	y ₁	y ₁	y ₁	y ₂	y ₂	y ₂	-	y ₃	?	y ₃	y ₃
Depth	-	y ₁	y ₁	-	y ₂	y ₁	y ₃	y ₂	y ₂	y ₂	y ₂
Facial expression	y ₁	y ₁	y ₁	y ₂	y ₂	y ₂	y ₃	y ₂	y ₃	y ₃	y ₃
Iris indication	y ₁	y ₁	y ₂	y ₂	-	y ₂	y ₃	y ₂	y ₃	y ₃	y ₃

Table 5. Scalogram Ordering of the Refined Characterization

Traits	Colossal Heads										
	Tres Zapotes 1	Tres Zapotes 2	La Venta 1	La Venta 4	La Venta 2	La Venta 3	San Lorenzo 2	San Lorenzo 5	San Lorenzo 4	San Lorenzo 3	San Lorenzo 1
Depth	-	y ₁	y ₁	y ₁	-	y ₂	y ₂	y ₂	y ₂	y ₂	y ₃
Facial expression	y ₁	y ₁	y ₁	y ₂	y ₂	y ₂	y ₂	y ₃	y ₃	y ₃	y ₃
Iris indication	y ₁	y ₁	y ₂	y ₂	y ₂	-	y ₂	y ₃	y ₃	y ₃	y ₃
Width	y ₁	y ₁	y ₁	y ₂	y ₂	y ₂	y ₃	y ₂	y ₃	?	-

expression is found only after some development and that, therefore, this end is the later. Other evidence would support this view. The generally better preservation of the heads at this end cannot be admitted as evidence, however, since all of the San Lorenzo heads¹ being rolled down into a ravine in ancient times would have been protected better than the La Venta heads which were left in situ.

The evidence to which I refer is seen in the scale. Definite iris indication (y_3) is grouped in a solid block on the right with the other y_3 's, this characteristic scalable like the rest. By its very nature, the trait of iris indication is a cumulative one and would not be easily lost, once established. In the development of veristic sculptural portraiture it is a trait that cannot precede the rimming of the eyes with projecting lids. The carving in depth of the eye, then, is a functional prerequisite for the representation of the iris in the manner of the San Lorenzo heads. The iris indication is merely a subtle refinement at the end of a tradition within which artists strove to depict the eye with realism.

The Colossal Heads are placed in sequence in Figures 35 and 36 with only Tres Zapotes 1 missing. The earliest head, Tres Zapotes 2, is at the top of Figure 35 and the latest, San Lorenzo 5, shows at the bottom of Figure 36. Full faces are flanked by profile views where these are available. (The back of San Lorenzo 2 is presented to show the curious niches there, obviously added later.

The columns of Hellenistic Palmyra show niches into which were set the tenons of consoles carved with the faces of rulers. That an analogous practice accounts for the niches behind the San Lorenzo 2 head is yet to be shown archaeologically, but later peoples of the Gulf Coast region fashioned so-called "hachas," which are tenoned heads.)

If one follows the sequence with his eye, the sensation is a flowing one, nothing jars. The impression is of a tradition. The configuration or gestalt seems to confirm subjectively what has been shown analytically, that is, that the sequence is meaningful.

The Ordering of Olmec Votive Axes

Marshall H. Saville's (1929) original grouping of several votive axes as being stylistically related led directly to the concept of the Olmec style. It may be assumed that Saville's basis for so classifying the axes was, in part, impressionistic. The axes seem to show enough internal consistency in their stylistic features to be treated as an entity. As is apparent, they lack the degree of homogeneity of the Colossal Heads. The provenience of the individual pieces, when known, indicates that they are found in a much more extensive area than are the Heads. This does not necessarily mean that the axes were manufactured over a wide area; they are small enough to have been easily transported for trade. Nevertheless, the possibility of dispersed manufacture must be considered along with that of a longer time range

to account for the greater diversity of the axes in relation to the Colossal Heads. More votive axes have become known since Saville's time. I have collected illustrations of 18 as compared with the eight that he showed. The wider range of axes when joined with the technique of Guttman scale analysis permits the checking and refinement of Saville's original assemblage.

In Table 6, which lists the axes that are analyzed, the first eight are those of Saville in the order in which he described them. The names are to be considered merely as tags, but in most cases they indicate the present whereabouts of the individual specimen. The order of the list may be considered as random except for Saville's obvious choice of the two most striking pieces to describe first.

Significant features of the axes were isolated by seeking to incorporate all possibilities into scalograms in the manner of the manipulations of the traits of the large heads. Admittedly some possibilities could have been overlooked because of a lack of ingenuity. For every retained trait, many capricious ones were discarded. Two sets of items emerged. The first group consists of position of hands, whether mouth shows gums or fangs, presence or absence of a V-slit visible from front down center of head, and whether the entire specimen is of a rectangular or of an egg-shape form. These characteristics may be indicated, for the purpose of illustration, by having a letter

Table 6. List of Olmec Votive Axes

-
1. Kuntz (in American Museum of Natural History)
 2. British Museum
 3. Museum of American Indian
 4. Dorenberg (in American Museum of Natural History)
 5. Peabody Museum
 6. Beyer (first published by Hermann Beyer)
 7. Museo Nacional de México
 8. U.S. National Museum
 9. Covarrubias Collection (from Guerrero)
 10. Cleveland Museum
 11. Ekholm (from a photograph in possession of Gordon Ekholm)
 12. Brummer Gallery
 13. Museum of Villahermosa, Tabasco
 14. Stendahl Gallery
 15. La Venta (in Museo Nacional de México)
 16. Covarrubias Collection - 2
 17. U.S. National Museum - 2
 18. Museum of Primitive Art
-

stand for each as follows: position of hands--A, on same level; B, no hands or on side; C, right above left; mouth--A, gums; B, fangs; head form--A, bifurcate; B, non-bifurcate; silhouette--A, rectangular; B, egg-shaped. As in the scaling of the Colossal Heads, the symbols are arbitrary. The same symbols are used for each category merely to better illustrate the manner of their clustering in the scalogram. These characteristics can best be shown for each votive axe in tabular form (Table 7).

Regrouping of the axes so that those with the most A's are placed on the left and those with the most B's and C's are on the right gives a scalogram (Table 8).

The traits which here lend themselves to scaling are not by nature ones that would lead me to infer an evolutionary causal factor as with the Colossal Heads. Rather they seem to indicate a difference in kind between two distinct depictions. Following this reasoning, I have made two groups of the axes by dividing the scalogram between numbers 4 and 17 the point in the scalogram at which the cleavage is greatest between the A's and B's. This results in an equal division of the 18 axes; all to the left show gums, those to the right, fangs. The axes exhibiting hands in front view are also divided by a line running vertically between numbers 4 and 17 into hands at the same level on the left and hands one above the other to the right. Head form and silhouette offer a few exceptions, which prevent the scalogram from

Table 7. Characteristics of Olmec Votive Axes

Traits	Number Assigned to Axe																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Hand position	C	A	C	A	B	A	A	A	C	B	B	A	A	A	B	B	B	C
Mouth	B	A	B	A	B	A	A	A	B	B	B	A	A	A	A	B	B	B
Head form	B	A	B	B	B	A	A	A	B	B	B	B	A	A	A	B	A	B
Silhouette	B	B	B	B	B	A	A	A	B	B	B	A	A	A	B	B	B	B

Table 8. Scalogram Ordering of Olmec Votive Axes

Traits	Number Assigned to Axe																	
	14	13	6	8	7	2	12	15	4	17	16	11	10	5	18	9	3	1
Hand position	A	A	A	A	A	A	A	B	A	B	B	B	B	B	C	C	C	C
Mouth	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B
Head form	A	A	A	A	A	A	B	A	B	A	B	B	B	B	B	B	B	B
Silhouette	A	A	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B

being a perfect one. Scalograms are a new phenomenon. It is doubtful that perfection should be expected in the analysis of so complex a phenomenon as art style. That configurations appear approaching perfection as in the present case seems significant, if not miraculous, to one who has tried the experiment suggested by Carneiro (1963: 198) of "filling out a matrix in some random way, such as by tossing a coin, and then seeing how much scaling can be made to appear."

A second group of traits which forms a scalogram in itself is the following: hand type--A, blocky hands without fingers; B, blocky hands with fingers; C, shaped hands with thumb indicated; fangs--A, straight; B, curved; C, double; treatment above eye--A, band; B, serrated plaque. These traits, when ordered in the same way as the previous examples, result in a scalogram (Table 9).

Table 9. Second Scalogram Ordering of Votive Axes

	Number Assigned to Axe																	
Traits	9	4	11	14	12	5	18	3	10	8	13	7	15	1	2	6	16	17
Hand type	A	A	-	B	B	-	B	?	-	B	C	-	-	C	C	C	-	-
Fangs	A	-	A	-	-	B	B	B	B	-	-	-	-	C	-	-	C	C
Treatment above eye	-	A	A	A	A	-	-	A	A	B	A	B	B	-	B	?	?	?

Again, an almost perfect scalogram has resulted. The results of our ordering can be seen in Figure 37. From the latter scalogram I have inferred an evolutionary sequence.

The vertical division has been made on the basis of the first scalogram, the horizontal divisions on the basis of the second. In looking at the diagram in Figure 37 and comparing it with Table 9, one can observe the configurations abstracted through the Guttman scale. For example, axes D and E show the change from the square

Figure 37. Olmec Votive Axes.

Divided into two classes and in chronological order as inferred from scaling are, from bottom to top: A, Dorenberg; B, Brummer Gallery; C, Stendahl Gallery; D, U.S. National Museum; E, Museum of Villahermosa, Tabasco; F, Museo Nacional de Mexico; G, La Venta; H, British Museum; I, Beyer; N, Covarrubias Collection (Guerrero); O, Ekholm; P, Peabody Museum; Q, Museum of the American Indian; R, Museum of Primitive Art; S, Cleveland Museum; T, Kuntz; U, U.S. National Museum - 2; V, Covarrubias Collection - 2.

fingered hand to the shaped thumbed hand (E) as well as the progression from the band above the eye (E) to the serrated eye plaque (D).

That evolution with the passage of time is the underlying factor here is inferred because of the nature of the traits that come into play in the scalogram. The separation of votive axes into two distinct groups was done on the basis of a difference in kind within the traits such as fangs as opposed to gums or a slit versus a banded head. The second scalogram for the votive axes, however, involves traits which show a difference as to degree as in the case of the curvature of the fangs or the elaboration of the hands. The change from block hands with no fingers to shaped ones with thumbs and from curved to double fangs in the axes is a cumulative or additive one just as is the elaboration of the eyes of the Colossal Heads.

The inferences for the temporal ordering in the sequences in Figure 37 rest not only upon the idea of cumulation. Carneiro (1962: 160-1) defines the second principle of explanation that I have employed, functional prerequisites:

This principle amounts to something more than the familiar concept of functional dependence, which states merely that x depends on y, and y depends on x, in some reciprocal and synchronic manner. Functional prerequisites implies that x necessarily precedes y, which is to say that y cannot come into existence without the prior existence of x. Note that principle does not state that y must follow x. It may and it may not.

The traits placed highest in the diagram indicate that they are later in time. How much time is covered by this sequence is unknown. Only a relative chronology can be inferred. Still, the time span represented by the stylistic changes in the votive axes seems much longer than that of the Colossal Head sequence; the changes in the votive axes are obviously much more radical than those of the Head sequence.

Both of these seriations, arrived at by using the Guttman scale, have wide significance for the study of the Olmec. The sequence of Colossal Heads demonstrates, first of all, that Olmec culture probably persisted at San Lorenzo long after La Venta was abandoned. The Heads from each locality form solid blocks within the scale: those from San Lorenzo are uppermost with La Venta and Tres Zapotes following in that order. Granting the inference that the Heads highest in the scale are latest temporally and the postulation that the Colossal Heads represent portraits of a succession of supreme chieftain rulers, the series should indicate that the center of political power in the Olmec region shifted respectively from Tres Zapotes to La Venta to San Lorenzo. Within the site of La Venta itself the spatial pattern of the Colossal Heads relates to the order of the Heads in the Guttman scale. Head 1, inferred to be the earliest at La Venta, is isolated south of the large pyramid near the center line. Numbers 4, 2, and 3 in that order in the scale and on the ground from west to east are in a line north of

the stone column enclosure (Figure 3). Most likely in this order they were created and set out. Unfortunately the monuments at San Lorenzo have been uprooted and rolled out of context. The monuments in place at La Venta have a story to tell, I think, in that their spatial and temporal relationships resemble such configurations at Maya sites about which relatively much more is known (Proskouriakoff 1960; Kelly 1962). This possibility is explored in the following chapter.

Of the votive axes, the only one with a certain context comes from a La Venta tomb (Figure 37 G). In the Guttman seriation, it is among those axes inferred as being the most recent. Monumental sculpture at La Venta can be compared to the series of axes and be seen to fall stylistically with these which are seemingly the latest. The tiger mask (Figure 15) carved on the sarcophagus shows both the serrated eye plaques and the curved fangs of these. Altar 1 (Figure 30) also shows serrated eye plaques. If, as is indicated, the monolithic stone carving at La Venta comes late within a long tradition, where are the beginnings of this tradition to be found? This question, too, is entertained in the following chapter.

Summary

What is thought to be the first application of the Guttman technique for scaling to an art style has been presented. Outside of the primary problem of clarifying Olmec culture as manifested in

Olmec art these investigations have a more general significance.

What I have shown is an evolutionary sequence for two types of Olmec objects. This is admittedly a limited focus. At the same time, however, the example argues well for wide application of the methodology I have described.

It should be possible to break down into their constituent elements or traits any relatively homogeneous group of objects. These could be primarily utilitarian or primarily artistic; a system of writing or a set of paintings would lend themselves equally as well to such treatment. Then, by following the Guttman procedure, it could be determined which of these elements are scalable.

A single underlying causal factor would be inferred for traits so isolated. A further inference could be made as to the nature of this causal factor depending on the configuration of the traits; the question being whether differences in the scalable traits are of degree or of kind.

If differences of degree are present the inference might well be that an evolutionary sequence is present. To determine which end of an evolutionary sequence falls later in time, the principle of functional prerequisites can be brought to bear. At the same time the possibility of a degenerative or disintegrative process being responsible for scaling must never be ignored.

If differences of kind are obscure this may mean that more than one object category is present (as with Olmec votive axes). It

might be inferred further that different artists or even different cultures created the products under scrutiny.

The field of archaeology is beset by puzzles requiring for their solution the classification and ordering of sets of objects. The Guttman scale is a powerful tool fitted to this task. It allows literally dozens of traits to be tested at the same time efficiently and quickly. The mental gymnastics to achieve the same results without use of the scale technique seemingly would require an exceptional mind and a great expenditure of effort and time.

The problems of classification and ordering are not unique to the field of archaeology. Anywhere such problems occur, the technique of Guttman scaling can be employed. Thus its application seems practically without limit. Within the field of history, for example, the process of micro-evolution may be detected whether the focus be an art style, an invention, or an idea. Developmental sequences in nature as treated in such fields as biology, physics, geology, and astronomy conceivably could be clarified and refined, if not revealed, by the Guttman technique.

The application of the Guttman scale in the present case has given us two solid sequences for Olmec art. The sequences are not impressionistic. Their basis rests in mathematics rather than subjectivity; I omit a discussion of the mathematical basis for scaling since Guttman (1941) has covered this material.

The ordering of the Olmec Colossal Heads and votive axes is grounded in several internal consistencies as revealed by scaling. To account for these consistencies I have inferred a constant and regular change over time. For the Colossal Heads this change involved the evolution of facial expression from a lack of animation to a smiling countenance to an expression of serenity. In proportion to height the Heads become steadily more narrow and more shallow. The eyes show a development from no iris to a well defined one.

In the votive axes an elaboration of the hand is observed, a development analogous to the stages in which an individual artist would sketch a hand. First a blocking out, followed by the distinguishing of the fingers, and finally the shaping of the hand with the shaping of the thumb. For the group of the votive axes that show fangs, these become steadily more complex. Straight fangs are followed by curved ones, which, in turn, lead to double fangs. At the same time, headbands give way to plaques above the eyes.

I consider these constructions as being of such solidity as to serve as foundations for further inferences. The scaling seems to me best interpreted as the function of a temporal development. If the Olmec art style developed in the manner that has been deduced from scaling, this bears directly on several aspects of the Olmec problem. The geographical origins of Olmec art, the role of La Venta in the history of the Olmecs, and the influences of Olmec art on that of later cultures.

In the following chapter these topics will be considered in detail.

CHAPTER V

CONCLUSIONS

Inferences Based on Scalograms

Several inferences, each bearing significantly on the Olmec problem, are forthcoming from the Guttman scalograms demonstrated in the previous chapter. The underlying assumption upon which the inferences rest is that the causal factor for variation in scaled traits is evolution over time; no other causal factors suggest themselves.

As has been mentioned, the sequence of the Colossal Heads might indicate a shifting of the seat of political power in the Olmec heartland from Tres Zapotes to La Venta to San Lorenzo because the earliest heads seem to be from the former site and the latest from the latter. This possibility could be related to something that has been established archaeologically: that whereas the stone monuments of Tres Zapotes and La Venta were found where originally placed by their creators, those at San Lorenzo had been ripped out of architectonic context with considerable vehemence and tossed into a ravine. Such violent behavior could well have had behind it the force of a social revolution, with the revolutionaries focussing their ire on the political capital while comparatively ignoring the previous centers of power.

This presages the abandonment of Maya lowland centers which occurred about a millennium later. Could the same forces have been at work in both cases? Demographic pressure and the ever-growing differentiation between farmers and theocratic leaders could have led to a peasant revolt with the Olmec as well as the Maya. It hardly need be said, however, that as we build hypothesis on hypothesis our arguments grow weaker.

If, in actuality, a revolution put an end to the Olmec development, it was not of such force as to extinguish completely the ancient heritage. The Olmec art style was to play an important role in the crystalization of Maya art.

Olmec Relations to Maya Art

J. Eric Thompson (1954: 46-47) characterizes the large stucco masks flanking the staircase on Pyramid E-VII sub at Uaxactun, Peten, Guatemala, as "distinctly Rococo." Because the pyramid dates from the Formative or Preclassic Period, its art style seems incongruent to Thompson ". . . although, as far as we know, this is an incipient, not a decadent art." In describing the masks, he says:

The curled tusks at the corners of the mouths, the eyebrows with accentuated shagginess, the flat snouts, and the peculiar half-tongue, half-incisor pendent from the upper lip leave little doubt that the jaguar is here displayed.

I would add to this that the curled tusks and shaggy eyebrows would, in view of the evolutionary sequence shown for Olmec votive axes, leave

little doubt that the E-VII sub masks are not the products of an incipient art at all. Curled fangs and shaggy eyebrows are diagnostic of late Olmec art. The masks, then, appear to show a linkage between Olmec and Maya art.

Other Maya subjects suggest themselves as being direct offspring of Olmec prototypes. Figures within niches as on stelae from Piedras Negras, Peten, Guatemala, could well have evolved from the niche figurines on Olmec table-topped altars. With complete data, a satisfactory sequence might be worked out using Guttman scaling. Subjectively, I see a sequence beginning with Altar 6 at La Venta (Fig. 38) in which a cubistic figure sits cross-legged with his back against the solid altar block. This would be followed by Altar 2 at La Venta (Fig. 39) with a shallow carving away following the shoulders. A deeper and more rounded niche is shown by Altar 4 (Fig. 9) and Altar 5 (Fig. 16) at La Venta. With Altar 3 (Fig. 40) the niche has expanded to the extent that its upper part has blended with the ledge of the table top on the altar, thereby losing its roundness and becoming rectangular. Because of this, Altar 3 at La Venta seems closest to those at Piedras Negras. A monolith from Laguna de los Cerros (Fig. 41) and classified by Medellín as late Olmec, appears to be a niched figure although it is badly damaged. It shows a close relationship to the Maya sculptures both in the headdress and in the squareness of the niche as indicated by the straight line above the head.

Figure 38. Altar 6, La Venta.

Figure 39. Altar 2, La Venta.

Figure 40. Altar 3, La Venta.

Figure 41. Altar at Laguna de los Cerroz.

If the assumption is correct that the form of the Maya figures-in-niches evolves from the Olmec, it follows that the function might also have the same origin. Unfortunately nothing is definitely known about the function of such figures, either Olmec or Maya.

Proskouriakoff's Explanation

An hypothesis has been put forward to explain the Maya examples. Tatiana Proskouriakoff (1960) holds that the monuments at Piedras Negras fall into distinct series. Their dates, physical grouping, and the repetition of glyphs and motifs all point to the sculpture having ". . . the qualities one might expect of a historical narrative" (p. 455). David Kelley's (1962) investigations of glyphs at Quirigua, Guatemala, reveal similar sequences. Specifically, it is held that each series of monuments depicts a standard set of events in the life of a particular ruler: his birthday or confirmation day, the inaugural of his rule, his death, and other milestones. Maya niched figures, which at Piedras Negras occur in such series, are credited by Proskouriakoff with indicating an inauguration. The personage, dressed in ceremonial garb, is seated in a niche below which is a ladder with footprints--Proskouriakoff's "ascension motif"--and above which is a "sky band."

Morley (1946: Plate 66) shows four such sculptures from Piedras Negras. In comparing the La Venta examples with these,

general resemblances can be noted such as the attitude of the figure, and the ceremonial garb of headdress and collar. More specifically, Altar 4, La Venta (Fig. 9), shows an abstract feline head which may be the homologue of the moan bird head centered above the niche in the Maya examples. Olmec niched monuments lack the ascension motif, but a Saint Andrew's cross is set between the fangs of the Altar 4 feline. This motif, flanked by two vertical elements, is characteristic of the Maya sky or planetary band. Of more importance in making a case for this particular Olmec-Maya connection is the appearance of two prisoners (or slaves or diffident subjects) at the feet of personages centered on many of the stones that form the Maya series. Altar 4 at La Venta, which shows bound prisoners at either end, could well be a prototype for the Maya monuments.

Not all the niched Olmec figures suggest ascension or inauguration. Those showing infants in the outstretched arms of a seated figure most likely correspond to those members of a Maya series which show the birthday or confirmation day of a ruler. Some specialists read infant sacrifice into these monuments, and it is known that the Aztecs sacrificed babies to the rain god, Tlaloc, in times of drought. Yet the Olmec "babes in arms" monuments and their small stone counterparts (Fig. 42) portray no sacrificial scenes. Furthermore, sufficient rainfall would not seem to have been a problem in the Olmec heartland; only the control of rainfall, its distribution in time, possibly could have

Figure 42. "Babes in arms" stone figurines. Left, from the Brooklyn Museum; right, from the Museum of Primitive Art, New York.

been of concern to the inhabitants of the rain forests of Tabasco and southern Veracruz.

As has been suggested, the death of an Olmec ruler could have been commemorated in the carving of a Colossal Head.

Is there a significance in the physical grouping of Olmec monuments akin to that which Proskouriakoff has postulated for the Maya? Comparative data for the solution of this problem are lacking. Only from La Venta do we have such information. At San Lorenzo, the monuments were violently uprooted in ancient times; the Colossal Heads rolled into a ravine. That three of the four Colossal Heads at La Venta are set in a row could be meaningful. Whereas at Piedras Negras the monuments relating to the life of one individual usually are grouped in a row in front of a temple pyramid, it is possible that at La Venta similar series were strung out behind the Colossal Heads parallel to the central axis of the site (Fig. 3).

Admittedly, all this is conjecture. The evolutionary series obtained for the Colossal Heads, the possibility of a similar series for Olmec altars combined with Proskouriakoff's thesis on the function of Maya monuments have led me to set down these speculations in the hope that they will lead to fruitful paths of inquiry.

Olmec Votive Axes

Of more significance than a possible niched-figure sequence and that worked out for the Colossal Heads is the sequence for Olmec votive axes. As has been shown, the uppermost end of this sequence shows a direct relationship with early Maya art.

Probably an equally convincing case could be made for the influence of Olmec on the Classic Period art of central Veracruz usually attributed to the Totonacs. The volute, an all pervasive element in Totonac art, is characteristic of what Covarrubias (1957: 166-167) has called the "transitional style" which ties Olmec to the styles of the Classic. The volute or scroll meander is found on Monument C, Tres Zapotes (Fig. 4) and on the Chalcatzingo reliefs (Fig. 5). Proskouriakoff (1953), in a study of scroll patterns, ignores their possible origin, but she notes:

Although the Maya and the Classic Veracruz styles are very different and show little evidence of direct contact with one another, both have a strong predilection for the form known as the scroll. Moreover, in both the form is drawn with rhythmic curvatures, a manner which is characteristic of art styles of the Classic period over most of Middle America (p. 389).

The similarity noted between the Veracruz and Maya scroll motifs can be explained by their both originating from a common source: the late Olmec volute. Thus, the late Olmec or transitional style seemingly can be tied into the artistic traditions that followed it.

Can similarly significant connections be established for early Olmec art? Through the scaling of Olmec votive axes, we have inferred what are the distinguishing features of this art. Is it possible to discover the origins of Olmec art by means of this knowledge?

Because the Olmec art style appears full-blown in the Tabasco-southern Veracruz region, many authorities feel that it did not evolve there. Indeed the question of Olmec origins is one of the major problems in Mesoamerican archaeology today. No general agreement exists on the point of origin. The question has more than historical interest; a theoretical problem is involved as well. As Sanders (1963) states it, Mesoamerican archaeologists who have interested themselves in the ecological problem of the environmental conditions necessary to allow for the earliest beginnings of civilization are divided into a Highland School and a Lowland School.

Michael Coe (1963: 32), who champions the lowlands, stresses that the Gulf Coast of southern Veracruz with rich alluvial soils and a growing season much longer than that of the highlands is ". . . the place of origin of the Mesoamerican Formative, where village-farming became a way of life for the first time."

Sanders (1963: 973), exponent of the Highland School, gives an important role in the formation of civilization to highland hydraulic agriculture as a cultural reply to ". . . the type of challenge offered

by arid regions in which large cooperative groups are necessary for effective manipulation of the environment."

Because many ramifications of culture theory are involved in accepting either posture, emotions run high when the differing points of view are aired. Personally, I have no emotional stake in this question at the moment. Statistical tests, the Guttman included, are rather unemotional ways of looking at things. The Guttman scalogram of the characteristics of Olmec votive axes points to a highland origin for Olmec culture.

In seeking the geographical point of origin for the Olmec art style, we could attempt to delimit the area of provenience for the axes which are earliest in the sequence. Unfortunately, the provenience data do not seem reliable. It is definitely known that one axe (Fig. 37 G) comes from a La Venta tomb and José Luís Franco assures me that what I have called the Ekholm axe comes from Yucuquimi near Mitla, Oaxaca. Even had we such information for all of the pieces, however, it would be to little avail simply because Olmec votive axes are quite literally art mobilier; they are today and they were so from the time of their creation. Thus, where they are found may tell little about where they were created.

I have mentioned that the axes inferred to be latest in the series show individual traits which are shared by the monolithic sculpture of the La Venta site. Conversely, no large sculpture in the La Venta

or Olmec heartland region shows traits in common with the axes lowest on the scale. Because of this, I hold that the artistic developments of the Tabasco-northern Veracruz region are relatively late within the Olmec tradition.

The monolithic sculpture of La Venta, San Lorenzo, and Tres Zapotes is too large to have been transported very far. Heizer and Williams (1960) believe that volcanic rock from the western flanks of the Tuxtla mountains was used at Tres Zapotes and San Lorenzo while La Union volcano, south of Villahermosa, could be the source for the La Venta lithic material. Presumably, it was shipped into the sites on rafts and sculpted there although no work areas have been found or looked for (Heizer 1962: 315). Their massiveness makes Olmec monoliths the antithesis of art mobilier.

Were it possible to relate large Olmec sculptures to the axes lowermost in the series as we have done with those uppermost, an excellent case could be made for the origin of the Olmec style. Happily, it can be done.

San Martín Huamelulpan

At 17 degrees 24 minutes North Latitude and 97 degrees 36 minutes West Longitude, lies San Martín Huamelulpan within the Mixteca Alta of the State of Oaxaca. Its elevation is 7,011 feet (2137 meters). Set at the entrance of the town church is a monolith (Fig. 43,

Figure 43. Left, monolith from Huamelulpan, Mixteca Alta, Oaxaca; right, monolith from Tonalá, Chiapas.

left) about 2 meters high. Like the La Venta sculptures, it is too large to have been made anywhere except very near its present resting place. Like the La Venta sculpture it is clearly of the Olmec style. Unlike the La Venta monoliths, however, it does not belong to the later manifestations of Olmec art, but rather to the earliest.

The San Martín Huamelulpan monolith looks like a giant enlargement of an Olmec votive axe. The characteristics of showing fangs, hands one above the other, and an undivided head would place it with the series in Figure 37, right side. Thus it appears to be an adult jaguar-human with fangs as opposed to the child jaguar-human depictions in Figure 37, left, series showing gums instead of teeth and a notch at the center of the head that might indicate the bregmatic fontanel. However, more significant are the traits which would place the Huamelulpan monolith vertically in the scale: hand type, fangs, and treatment above the eye. The hand type is blocky without fingers; fangs are slightly curved; treatment above the eye is a band. Each one of these features places the monolithic sculpture with the axes lowermost in the series: those inferred to be the oldest. As had been mentioned, just how much older the lowermost axes are than those uppermost is unknown, but considerable age is likely to be involved.

This is not to infer that the giant sculpture was copied from the much smaller axe forms. Quite to the contrary, the study of art

history shows that, generally, small sculptures are inspired by larger ones.

Little is known of the Huamelulpan site. Alfonso Caso and Lorenzo Gamio (personal communication) dug there for a few days in 1961, but have published no report. Gamio says that the site is extensive, but that probably because so little of it has been sampled archaeologically no Olmec ceramics have been found there. For many years, however, antiquity dealers in Mexico City have been selling Olmec ceramic pieces which purportedly come from northwestern Oaxaca.

Geographically, San Martín Huamelulpan is situated at the end of a corridor that leads right into the Olmec heartland. The area around Huamelulpan is drained to the northeast by the Santo Domingo River which flows into the Papaloapan. The Papaloapan discharges into the Gulf of Mexico, slightly north of the Tres Zapotes site (Fig. 2). Because of this canyon passageway, a close cultural connection, as demonstrated by a sharing of the Olmec style in gigantic art, between the Mixteca Alta and the southern Veracruz-northern Tabasco region is not to be wondered at.

Guerrero

Another river corridor leads from the Huamelulpan region across the State of Guerrero. The Mixteco River flows northward to the northwest corner of Oaxaca, then curves to the west to join the

Balsas which cuts across the State of Guerrero to empty into the Pacific. According to Covarrubias (1957: 76), Olmec art ". . . may well have had its origins. . . in the valleys of the Pacific slopes of Oaxaca and Guerrero, where its most archaic forms appear."

Covarrubias' impressionistic, subjective view as to what constitutes the archaic forms of Olmec art coincided with our ordering Olmec votive axes by Guttman scaling. The presence of these archaic forms in the Balsas drainage strengthens the case for the San Martín-Huamelulpan area being the center of production of the earliest Olmec art.

Monte Albán

Jiménez Moreno (1959: 1030) speaks of La Venta and Monte Albán during the Middle Preclassic as the most evolved Mesoamerican centers, as maintaining contact, and as forming a "civilizing axis." However, as Jiménez adds, at this time the La Venta area lacked the system of calendaric glyphs so characteristic of Monte Albán I. It would appear that had the two centers had close and constant ties, the glyphic system found at Monte Albán during Period I would have been manifest on the stone monuments from La Venta. Such is not the case. The only obvious example of glyphic notation appears on Monument 13 at the Tabasco site (Fig. 32). The glyphs are somewhat reminiscent of those on the Monte Albán "danzantes" because of their paucity and

simplicity (Fig. 44). At La Venta, however, nothing compares with the complex columns of glyphs and bar-and-dot numerals of the stelae from Period I of Monte Albán.

The discrepancy may best be explained by hypothesizing that the similarities of the two sites are the result of their having a common origin. It appears that they both grew out of the cultural heritage which took form at a geographically intermediate locus. As has been demonstrated, San Martín Huamelulpan, in the Mixteca Alta of Oaxaca, manifests the expected characteristics of such a locus.

Tlatilco and Morelos

San Martín Huamelulpan is thus seen to be centrally located in relation to three areas where later Olmec art was manifest strongly. Possibly its cultural ties with the area to the northeast including Tlatilco in the Valley of Mexico and Chalcatzingo and Atlihuayán in the Valley of Morelos were not so direct geographically as with the heartland, Guerrero, and the Valley of Oaxaca. Still, Huamelulpan lies between them and the Gulf Coast heartland and not any farther away.

Connections with Peru

The area around Huamelulpan also drains to the south. The Verde River, which flows into the Pacific Ocean is the terminus for these drainages. Easy access to the Pacific would have been expected for any location that gave origin to the Olmec style in view of the obvious

Figure 44. "Danzante" from Monte Alban, Oaxaca.

connections between the Olmec and Chavín art styles. The Chavín style is known from the northern highlands of Peru. In relating the two, M. Coe (1963a: 34) says: ". . . Olmec Culture is the full equivalent both in temporal and in typological sense, of Chavín in Peru, with which it was probably connected through long-range diffusion." The Peruvian coastal manifestation of the Chavín style is called Cupisnique and it shares with the Olmec Tlatilco culture of the Valley of Mexico:

". . . stirrup-spout jars, bottles, zoned dentate rocker-stamping, color zoning, animal effigies, split-face dualism, and the jaguar or were-jaguar as a cult motif" (Coe 1963b: 102).

David B. Smith considers the incised figures on stone slabs at Cerro Sechin, Casma Valley, Peru, to be influenced by the Olmec style. He and Coe independently arrived at the impression that some of the pottery from Kotosh in the central highlands of Peru show Olmec influence. Smith (quoted in Kidder 1964: 460) says:

We see the real possibility that Olmec may have directly or indirectly influenced the northern coast of Peru at a time prior to the full development of Classic Chavín art as known at Chavín de Huantar. . . and at such places as Cerro Blanco in the Nepeña Valley and at Moxeque in Casma Valley. At any rate, after a thousand years of settled agriculture something sets off a fluorescence of art and the first indications that the communities of a region are united in common economic, religious, artistic and architectural endeavors.

Kidder (1964: 461, Fig. 6) illustrates an example of what Smith is speaking of: a turquoise head from the northern coast of Peru. It appears to me to be of purest Olmec style.

Perhaps a little more tenuous is the "Olmec design" on a vessel from Kotosh, in the central Peruvian highlands. The design is an ear of maize highly stylized in the Olmec manner. It appears on a pre-Chavín bottle. From this Coe (1962) makes a case for Olmec culture beginning before Chavín, but not without considerable objections from Peruvian specialist Edward Lanning (1963). I would at least grant to Lanning that the traffic was two-way. The stone slabs from Placeres de Oro, Guerrero depicted by Covarrubias (1957: 113), in noting their "Chavín style," seem proof enough of this.

Coe (1963b: 104) explains the stylistic similarities of Olmec and Chavín:

. . . Coincident with the ascent of Olmec, a long-range, maritime, trading network had been established between the Pacific coasts of Mesoamerica and Ecuador. This route, or an extension of it, could have been utilized by Olmec or Olmecoid missionaries and traders to reach Peru, perhaps as early as 1000 B.C. . . . The Mesoamericans would have introduced, along with a Tlatilco-like ceramic complex, the Olmec art style and Olmec religion, centering on the worship of a large spotted cat with snarling mouth, a feline which could only be a jaguar. The curvilinear, "realistic," and basically sculptural art style merged with the native Peruvian canon based on fabric structure to produce the art of Chavín. . . .

The sculpture found by Ferdon (1953) on the Pacific coast of Mexico at Tonalá, Chiapas, although smaller and less elaborate than the Huamelulpan monolith shows some of the same primitive Olmec features: straight fangs and simplicity of treatment above the eyes. It points to an early Olmec penetration to the Gulf of Tehuantepec

coast, a penetration originating perhaps in the Mixteca Alta.

The implications of this early exclusive sharing of a great art style are important in the study of culture. Why did true civilization develop in the New World only in Mesoamerica and in the Andes?

Willey (1962: 9-10) makes a telling point when he says that these styles are

. . . the symbols for the religious ideologies of the early farming societies of Mesoamerica and Peru. . . . that in these ideologies these early societies had developed a mechanism of intercommunication, a way of knitting together the smaller parts of the social universe of their day into a more unified whole than it had heretofore been or would otherwise be. . . . the sharing of common ideologies led to the threshold of civilization by enlarging the effective social field. By this enlargement more individuals, more social segments, more local societies combined and coordinated their energies and efforts than at any time before.

Early Plant Domestication

Situating Olmec origins in the San Martín Huamelulpan area makes sense in still another way. The recent pioneering work by MacNeish (1964) on early plant domestication in the New World shows that the essential staple of the ancient inhabitants of Mesoamerica--maize--was most likely domesticated somewhere in the Mexican highlands south of Mexico City and north of Chiapas. Huamelulpan lies midway in this zone.

The causal relations between the invention of agriculture and the rise of civilization or urbanization are intricate. Because of their complexity, they have not, as yet, been unraveled by social scientists.

Nevertheless, for civilization to develop, the economic underpinning afforded by agriculture seems to be necessary. Perhaps that Huamelulpan is located in the area of Mesoamerica where the discovery of maize agriculture took place is causally connected with another important cultural development that occurred there several millennia later: the creation of a sophisticated art style. From this creation can be inferred the rise of the first full-time specialists in the arts. This could be the beginning in Mesoamerica of a process that would lead to the complex division of labor characteristic of civilization. Thus for the New World both agriculture and what we might call a proto-civilization evolved in the same region. This seems not to have happened in the Old World.

Caso's Mesopotamian Parallel

For the Near East, Braidwood (1960) has demonstrated the earliest domestication of wheat and barley on the upland flanks of the Fertile Crescent to the north and east of the Tigris-Euphrates Valley. Only after village agriculture was well under way in the upland area did the practice of agriculture descend to the desert plains. For this to come to pass, irrigation had to be discovered. Only by irrigation techniques could the desert of the Tigris-Euphrates flood-plain be cultivated. It is likely that the natural flooding characteristic of the delta area served as an inspiration for the development of irrigation.

The early civilizations of Mesoamerica did not flourish in deserts. Nevertheless, striking parallels with early developments in the Near East do hold for Mesoamerica. Alfonso Caso (1964) has called the Olmec heartland the "Mesoamerican Mesopotamia" because flood-plain agriculture was likely carried out along the banks and at the mouths of its rivers. Natural flooding of flat lands, bringing with it moisture and rich silts, allowed for a permanence impossible with slash-and-burn agriculture. Caso points out that the slash-and-burn system is wasteful in terms of expenditure of human energy and the allocation of fallow land. The latter characteristic dictates semi-permanent or shifting settlements. With irrigation agriculture, permanent settlements are possible. If flood-plain irrigation was carried out along the banks and deltas of the rivers of Veracruz and Tabasco, permanent settlements there would have been feasible.

Caso's ideas place him along with M. Coe and other exponents of the Lowland School and in opposition to Sanders and Heizer, who make the assumption that the La Venta culture group were slash-and-burn farmers (for example, see Heizer 1962). Before they can be considered as other than conjecture, however, much research must be done on the questions they raise. Ancient flood-plain irrigation would be difficult, if not impossible, to demonstrate archaeologically in a region of rain-forests unless stone dams or stone-lined canals were involved. Sixteenth century documents from the area, especially if they dealt with

litigation involving riparian rights, could prove illuminating. Ethnographic descriptions of flood-plain irrigation by peoples of low technology in tropical environments would also be of great utility.

At any rate, what occurred in the Olmec heartland area of southern Veracruz and northern Tabasco at the time when Olmec art reached its culmination does not alter our basic argument that the Olmec style had its origin in the highland area of the Mixteca Alta.

The Olmec Problem Reconsidered

At the close of Chapter I the Olmec problem was broken down into subheadings. One of these was the question of the origin of the Olmecs. Three alternatives were listed: that of Covarrubias' state of Guerrero; Piña Chan's region of the joining of the states Oaxaca, Morelos, and Puebla; and M. Coe's southern Veracruz-northern Tabasco heartland. The solution that we have proposed coincides closest with Piña's colocation. Our contribution has been to build a case, step by step, and give an answer that is not speculative, but reasoned. Our methodology has pointed out an area that, in retrospect, seems ideally situated for the spread of the Olmec style and culture. River pathways connect it with the Gulf Coast region proposed by Coe, and with the Guerrero region put forward by Covarrubias as the place of origin of the ancient culture. At the same time it is not far from the Pacific Ocean route to the Chavín heartland of early Peru.

Although it has been possible to give one logical answer to a problem unsolved up to now--that of Olmec origins--our unraveling of other enigmas posed by the Olmecs must be more speculative. The starting and ending dates for the Olmec can only be guessed at, for example. If the radiocarbon dates for the beginnings at La Venta are correctly interpreted as around 800 B. C., the beginnings of the art style as seen at Huamelulpan probably go back into the Lower Pre-classic, perhaps as early as 1500 B. C. Admittedly, this is highly speculative. All that we have shown is that the Huamelulpan monolith is older relative to other Olmec sculpture, but we can only guess at the time involved. Several centuries of evolution were seemingly required to bridge the gap between the simplicity of Huamelulpan art and the relative complexity of that at La Venta.

As for the end of the Olmec style, it could be held that in merging with the Classic styles it did not die at all. The Olmec tradition seems to have persisted despite a violent revolution that brought an end to the probable last Olmec political center, San Lorenzo. Yet the style did not continue in its pure form. We agree wholeheartedly with Jiménez Moreno (1959: 1031) in his view that Stela C at Tres Zapotes is a testament of Olmec culture incorporating calendaric knowledge that arrived for the first time from outside. The jaguar mask on the face of the stone opposite the bar-and-dot date appears to be even more evolved than those on the axes uppermost in the sequence

(Fig. 15, top). Jiménez sees the calendaric system as coming from the Maya region; it could even have come in along with actual Maya invaders tempted by the internal strife that was bringing an end to Olmec dominance.

The date on Stela C has been interpreted as 31 B.C. using the Goodman-Martinez-Thompson correlation under the assumption that the Maya calendaric system and that at Tres Zapotes used the same starting point. It would appear that the Spinden correlation, which would give a date 260 years earlier, 291 B.C. would better fit with the radiocarbon dates for the abandonment of the La Venta site at around 400 B.C. This would give about one century during which Olmec leaders--five successive ones, if our hypothesis about the Colossal Heads is correct--ruled from San Lorenzo before the final culmination. Recent radiocarbon dates from Teotihuacan push back the end of the Classic there by about three hundred years; in view of this, the end of the Olmec culture at two or three hundred years before Christ seems reasonable.

What can Olmec art tell us of the socio-political organization of its creators? The presence of full-time specialists in the arts is surely attested. To reach the perfection of Olmec lapidaries and carvers of monoliths would certainly require that one devoted all his time to the sculptor's art.

The content of the art reveals religious specialists. For example, in the reliefs from Chalcatzingo (Fig. 11) three personages, clad in capes, breechcloths with elaborate belts, and imposing head-dresses appear to be holding maize stalks as they parade in front of a bound, nude figure whose mask has been twisted to the back of his head to reveal a bearded face (Fig. 13). It would be difficult to interpret the scene as being other than a fertility ceremony conducted by three priests.

It is assumed that the priests and their retinues were permanent residents in the ceremonial centers of the Olmec heartland. Heizer (1962: 312) supports this view and continues:

The religious functionaries shown on the sculptured altars and stelae we may assume to have been masters of formalized ritual, and since these massive carvings represent a high (perhaps the greatest) technical achievement of the society, the priests may be assumed to have occupied a very special and elevated status within that society. Since the La Venta site represents the most substantial evidence of the activity of that society, it may be proposed that the priests held the highest prestige and authority roles in the La Venta population. And from this flows the further indication that the religion which the priests symbolized was a dominant aspect of the society and that this religion served as an integrating or centralizing mechanism with the ceremonial site as its vital center. . .it is probable that the religion was voluntarily supported by the general population because that same population was beneficiary of the religion.

Most likely the priests were the sole patrons of the arts. All Olmec art production seems to have been destined for them; it is hieratic as contrasted to peasant art. In the Valley of Mexico, for example, the Olmec art found in the Middle Preclassic horizon existed contemporaneously with the traditional peasant art of the Lower Preclassic

heritage. Where we find Olmec art, we can infer the presence of priest patrons for it, although at times it could have been copied because of its beauty and its prestige value by peasant artists for a peasant clientele. William Coe (1952: 69), in characterizing the presumed relationship of Maya priests to peasant communities could be just as well describing the dynamics of Olmec priests in contact with "a community with a relatively static, insular, uncomplicated culture, but one that could not mitigate the profound uncertainties of agricultural life. The priestly group, whether foreign or locally derived, appears to have claimed this power and thus was able to extract enormous labor from the countryside-labor that fashioned a context for the power itself." The inference of a theocratic form of government from Olmec art seems a safe assumption.

How far did this theocratic power reach? Monuments in the Olmec style extend from northern Veracruz to Guatemala and El Salvador. Does this mean that Olmec political power could have engulfed the area within these boundaries? Conceivably, the introduction of Olmec art to these far reaches could have been carried out by any one of three groups: priest-missionaries, traders, and warriors. M. Coe (1963a: 34) believes that warriors played a role in the dissemination, saying that "not only through diffusion into lesser tribal cultures, but also by means of outright imperialistic invasion of regions as distant as El Salvador, the Olmecs set their stamp upon southeastern

Mesoamerica. . . ." Coe offers no evidence to support the contention of imperialistic invasion. Warriors are easily distinguishable in sculpture. For example, Toltec representation of men with shields and spears leaves no doubt as to what is being shown. Olmec art does not show personages bearing arms. Religious proselytization rather than armed invasion appears as the more likely process for the spread of Olmec monumental art.

There is no proof either for or against Olmec imperialism. Since imperialistic invasion is an essential part of the process of empire building, we cannot speak with certainty of an Olmec empire. Only if the Olmec priest-rulers imposed themselves by a military force directed from a political power center can we speak of an Olmec empire. What Caso (1964) has called an "Olmec presence" is evident over much of Mesoamerica, but, as Caso adds, it is difficult to explain how this presence diffused. In Europe the "Gothic presence" and the "Roman presence" are equally evident, but they appeared through quite different means.

The Olmec stylistic unity of Mesoamerica in Preclassic times is definite. It reflects an ideological unity if not a political one. Olmec religious ideology seems to lay the groundwork for the Mesoamerican religion of later times: a religion that ignored political borders. It is also possible that it played a similar role in the development of Andean religion. Now, for the first time, we can say with some assurance

that the pre-eminently consequential development of Olmec ideology had its earliest beginnings in the Mixteca Alta of Oaxaca.

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