Stone in the Center

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STONE IN THE CENTER

By

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THESIS

Submitted in partial fulfillments of the requirements

For the Degree of Master of Arts,
With a Major in Art History

Governors State University
University Park, IL 60466

2012
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Introduction

There are several attributes that combine to define a civilization. Throughout history, archaeologists have spent many years developing key aspects to aid in this description. Many of these can include the environment and the resources that are given around a group of people, their interactions amongst their own community as well as surrounding communities, and different traditions or beliefs instilled on the community from previous generations. Societies throughout history have taken their cultural beliefs and insights and reinforced these ideas into many aspects of their day to day lifestyle, thus displaying the relationship between material items and social relations. One way in which a community is able to display their ideas is through the architectural structures and sculptures that they created. Constructed for various purposes, architectural structures are able to reveal an aesthetic that is reflective of the community along with giving insight into their beliefs allowing for a more comprehensive understanding on how a civilization was organized and functioned over time. One area in which there are many remnants of architectural structures along with
sculptures that were made is the city of Tiahuanaco, thereupon allowing for information to be gathered regarding its creators and inhabitants.

The ancient city of Tiahuanaco is located in South America, more specifically in modern day Bolivia amidst the Andes Mountains (Map 1). The Andes Mountains are the world’s largest continental mountain range appearing as a result of the westward bound continental plate colliding with and rising over the eastward bound oceanic floor. This tectonic activity is ever present with buckling and rising at a rate of .3 millimeters each year (Janusek, 2008). Devastating earthquakes are a ubiquitous threat among this area resulting in the construction of architecture that was monumental and built to last.

The Andes Mountains are comprised of two imposing parallel, snow capped mountain chains that diverge significantly resulting in an altiplano, or high plateau. The Andean altiplano has an elevation that is remarkable, soaring approximately 4,000 meters above sea level making for a dramatic landscape. This plateau is astonishing in size stretching 800 kilometers from north to south reaching the southernmost areas of Peru to the north and stretching as far as the northwestern regions of Argentina to the south (Map 2). The width of the plateau varies throughout stretching anywhere from 75 kilometers to 100 kilometers from east to west covering areas of Bolivia, as well as Peru, Chile, and Argentina.

Being that the plateau is surrounded by mountains, there is a significant amount of runoff water resulting in the appearance of fresh water lakes on the altiplano. The most significant lake on the altiplano, also being one of the last remaining, is Lake Titicaca located just northwest of the city of Tiahuanaco,
roughly a distance of 20 kilometers (Map 3A-B). Lake Titicaca is the highest
lake in the world and the largest freshwater lake in South America with depths, at
some points, reaching an astonishing 180 meters. The lakes impact on both the
environment and climate throughout this region is immense.

Lake Titicaca was a vital resource to the ancient people living at
Tiahuanaco. Because of the lakes great size, it was and is able to retain an
enormous amount of heat from the sun making the temperatures closer to the lake
much milder in addition to being more predictable. Plant life is slightly more
plentiful near the lake including totora which is an edible reed used by the ancient
civilization. The lake itself is home to an assortment of animals including
waterfowl such as ducks, geese, and flamingo, as well as several varieties of fish
serving as an abundant and reliable source of nourishment to the ancient peoples.
Predator birds such as hawks, caracaras, and condors are more prevalent around
the lake as it also provides a source of food for them. Although the lake has many
attributes that are beneficial and were able to aid in the survival and success of the
ancient civilization, several greater obstacles derived from the location making
their prosperity quite challenging.

The climate on the altiplano is extremely harsh in result of the high
elevation thus experiencing intense sunlight during the day followed by sharply
dropping nighttime temperatures. The possibility of freezing is likely and
unpredictable making the traditional methods of farming impractical. The
development of an irrigation system that would be conducive to this type of
environment was essential to the growth and success of the civilization. There are
remnants today of the advanced methods that were used by the people of Tiahuanaco known as raised-field agriculture (Figure 1). Raised-field agriculture is a process in which artificial mounds are made for planting crops (Kolata, 1993). These mounds were separated by channels of inlaid water that served several purposes in the growth of the plants. Most obviously the irrigation of the channels provided moisture to the growing crops but was also able to absorb and retain the extreme heat from the sunlight. This was beneficial in that the channels of water would then slowly release heat over the night. Acting as thermal insulation, the release of heat protected the crops from the cold nights reducing the likelihood of the crops freezing. Raised-field agriculture also helped to reduce the amount of erosion of the plants. The development of this system allowed for several crops to be produced including a variety of potatoes and quinoa. The channels also served as a home to fish making raised-field agriculture a productive source of food and nourishment to the people of Tiahuanaco and the growth of their population.

Rainfall throughout the plateau is usually only present for a short period of time lasting from December to March, wherein the amount of rains during this time can be devastating. Throughout the rest of the year rainfall is near nonexistent making the vegetation throughout the region extremely sparse consisting of only grasses and low shrubs. The proximity to the lake is also a factor involving the amount of rainfall. More predictable and abundant rainfall is apparent nearer to the lakes assisting in the production of agriculture. Farther
south throughout the altiplano, the climate becomes more arid and desolate making agriculture near impossible.

In correlation with the climate, there were few animals that were present throughout the altiplano that were not associated with Lake Titicaca. These natural inhabitants of the land that were able to withstand such harsh conditions included mountain lions, deer, wild guinea pigs, armadillos, and camelids. One of the greater accomplishments of the ancient peoples of this area was the domestication of camelids including the llama and alpaca (Young-Sanchez, 2004). The llamas and alpacas served many purposes for the ancient civilization of Tiahuanaco. These animals were bred carefully for their luxurious coats of wool and leather used in the making of textiles such as clothing and blankets. They also served as a great source of food while, no part was left unused in the camelids death. Many of the bones their bones were used to make utensils or tools. The sturdy backed animals provided an excellent form of transportation for the ancient peoples as well resulting in the expansion of ideas throughout surrounding areas of the city. Their dung was an exceptional form of fertilizer for crops assisting to the difficult conditions for cultivating agriculture throughout the area. Later, it is thought that the llamas and alpacas may have been used in sacrificial offerings (Young-Sanchez, 2004). These animals were a large contributor to the success and growth of the civilization at Tiahuanaco.

Over the past few centuries and further throughout research, archaeologists have come to an accepted agreement as to when the ancient civilization of Tiahuanaco had survived. Tiahuanaco was home to one of the
most fascinating civilizations of the ancient world, now being viewed as the first state of the South-Central Andes (Young-Sanchez, 2004). It is believed that the state rose around 500 AD expanding on cultural values and religious ideals that had been developing in the region for many centuries (Bennett, 1964). It is at this time that there was a significant change in several avenues of the people’s life, deeming this the start of a great civilization that would go on to flourish for several centuries.

Archaeologist Wendell C. Bennett was the first to establish dates and categorize the periods throughout this area’s history. His cultural sequence included Early, Classic, and Decadent phases, which are more commonly referred to today as Late Formative, Tiwanaku IV, and Tiwanaku V (Lumbreras, 1974). The Late Formative period dates from 100 BC to 500 AD. It is at this time that the early foundations of the Tiahuanaco civilization were being established with 500 AD dating the start of Tiwanaku IV. Tiwanaku IV lasted until 800 AD, followed by Tiwanaku V ending with the civilizations collapse around 1100 AD. This breakdown of dates and periods is accepted by many modern researchers and scholars presently, although this has not always been the case.

Arthur Posnansky was an archaeologist that began studying Tiahuanaco at the turn of the century, spending over fifty years conducting excavations and research of the site. Posnansky (1945) believed from his findings and calculations that Tiahuanaco was 17,000 years old with the start of the civilization dating back to approximately 15,000 BC, thus making Tiahuanaco the oldest city in the world. This view was later thought of as preposterous with the dates determined by
Bennett overriding. Even though it is thought today that the ancient civilization of Tiahuanaco inhabited the city from approximately 100 BC to 1100 AD, with further research and investigations it is possible that this theory may change.

The city of Tiahuanaco and its ruins has caught the attention of many people throughout history from travelers to archaeologists and anthropologist. One of the earliest accounts of this site was recorded in 1549 when Spanish conquistador Pedro de Cieza de Leon visited the city of Tiahuanaco and immediately began asking questions as to its origin. The Inca people of that time were unable to answer any questions as to who had built these monumental structures but that they knew that the structures had been there before their time (Cieza, 1553/1959). Since then, the explanation as to why the structures were created has sparked the curiosity of many individuals. The search for answers has embodied many in hopes of finding an understanding regarding the enigmatic city.

The city of Tiahuanaco is one of the most challenging sites to interpret throughout the Ancient Andean cultures. There are many questions that arise from this site with little convincing explanations intriguing my interest in this area. When studying art and its history, it seems that there are many regions and artifacts in which definitive explanations are lacking. The more popular areas featuring enigmatic stonework come from the Easter Islands and that of Stonehenge. My intrigue for the city of Tiahuanaco and its surroundings began with its most well known artifact termed today as the Gateway of the Sun. After
further investigation of this piece and the region, I became more captivated finding an abundance of exquisitely crafted stonework comprising the city.

Throughout this investigation, I will research the remnants of the stone structures and sculptures at Tiahuanaco ascertaining knowledge regarding the culture and beliefs of their creators. To accomplish this task, literature is reviewed to analyze excavations conducted at the site and prior research findings, as well as interpretations that have been made. I will then begin by examining the different architectural structures and sculptures that were created by the ancient civilization at and near the site.
Review of Literature

The name Tiahuanaco is thought to have been derived from the word taypikhala from the language of the Aymara Indians whom presently reside in this region. The meaning of which is “stone in the center.” The monumental stone structures that have been found at the site shape the identity of this mysterious city. Throughout this study, there will be several sources discussed pertaining to the city of Tiahuanaco along with its architectural structures and sculptures. Ideas have advanced throughout the years regarding the site with the growing interest of the city, although there is still much to be uncovered about Tiahuanaco. There are large portions of the city that have yet to be excavated with many archaeologist presently working towards finding a better understanding of the people that created such monumental structures. With new information, interpretations about Tiahuanaco are evolving and constantly changing. This review will be organized chronologically displaying how theories and opinions about the city have changed since its discovery, through the minds of many who have attempted to explain this ancient region and its inhabitants.
The ancient city of Tiahuanaco and its massive stone structures has undoubtedly sparked the curiosity and interest of many since their discovery. Firsthand knowledge of the basics behind the culture including the people’s political history, economics, or religious beliefs is nonexistent due to the fact that a system of writing was never developed throughout the Ancient Andes (Anstee, 1970). There are also no surviving oral accounts, being that of fact or legend, that had been passed down to the modern descendents of the region. By having no written accounts of the civilization, a full understanding as to why the architectural structures and sculptures were created at Tiahuanaco is quite challenging. Modern interpretations of this enigmatic city must then be obtained by other means.

The way in which information is gathered about the culture that inhabited the city of Tiahuanaco is through their material record. There are many different material aspects that are observed and examined in hopes of finding information about a civilization. The structures consume a large area, interpreting their size, how they were built, and their placement on the land as well as in relation to other structures to name a few. Many of the structures at Tiahuanaco have weathered, been moved, or have been damaged or destroyed, making interpreting that much more challenging. The earth has also covered many of the items produced by the ancient civilization. Artifacts buried beneath the surface at or near the site are an important part of this cultures material record that has yet to be discovered. The ways in which the natural landscape has been altered is another key factor in understanding the culture. Although many have began uncovering the material
items at Tiahuanaco, this is yet a small portion of the entire site. There is still much of the site that has yet to be excavated leaving room for many new discoveries and interpretations to come, ultimately in hopes of reaching an understanding into the lives of these ancient people.

The earliest written account of the city of Tiahuanaco was by Spanish Conquistador and chronicler Pedro de Cieza de Leon. Throughout his lifetime, the explorer traveled among areas of South America documenting his discoveries, concentrating mostly in Peru pertaining to the Incan empire and the Spanish conquest. His detailed descriptions of Peru were originally published in 1553 and later reprinted in 1959, a contributing factor to becoming a well known name. His book titled *The Incas of Pedro de Cieza de Leon*, later translated by Harriet de Onis, contains the first written descriptions of the ancient city that are known. Visiting the city in 1949, Cieza referred to Tiahuanaco as being small in size but containing great buildings, “a remarkable thing to behold” (p. 283-284). He concluded that the buildings were old, agreeing that they predated the Incas making them the “oldest antiquity” of Peru. Although Cieza’s descriptions of Tiahuanaco were very brief and accounting for only a small portion of his book, he was the first of many to come in the long journey attempting to find answers to this puzzling city.

Many years passed before another would attempt to describe and interpret the city of Tiahuanaco. The first descriptions and analysis of the structures at Tiahuanaco would not come until the latter half of the nineteenth century from explorers and archaeologists.
Ephriam George Squier conducted extensive research at the site describing his findings throughout his book. *Incidents of Travel and Exploration in the Land of the Incas* was first written by Squier in 1877 and recently reprinted in 1973. This book documents a vast amount of information previously not identified regarding the structures at the site. Squier marked a turning point in trying to find answers with the use of scientific means. He was the first person to take pictures of Tiahuanaco along with sketching maps of its structures (Map 4). Sketches of the structures accompanied with descriptions were extensive and included throughout his writing (Figure 2A-B). Squier (1877/1973) believed that Tiahuanaco was the oldest and most advanced city of both North and South America referring to it as the “city of the sun” (p. 272). Describing the remains as extremely extensive, Squier inferred that the inhabitants were meticulous and mastered in building architectural structures adding that there are no other structures throughout the world that have been constructed in the same fashion. Squier’s interpretations of the city conclude that this was a sacred place that worshippers would travel to visit, or pilgrimage to. Due to the harsh climate, Squier believed that this site was not a place to harness a successful population. “Tiwanaku may have been a sacred spot or shrine, the position of which was determined by an accident, an augury, or a dream” (p. 300-301).

During the time in which Squier was finishing his book covering the ruins at Tiahuanaco, a man by the name of Alphons Stübel was also investigating the site. In 1876, Stübel visited the city for a time period of just over a week obtaining an astounding amount of information in such a short time. After
returning back to Germany, Stübel collaborated with Max Uhle, the coauthor, in the writing of their book *The Ruins of Tiahuanaco in the Highlands of Ancient Peru*, published in 1892. Translating the results from Stübel’s investigations, this book conveys an adequate idea of the carvings and details of the ruins for the first time. The book includes a large map of the city as well as a panorama illustrating the architectural layout and scenery in which the ruins were found with printing and plates that were beautifully executed. The authors also included a detailed description of how they believed the stones were originally intended to have been placed and joined together. Stübel and Uhle (1892) examine and discuss the possible origins of the site concluding that the ancestors of the Amyara were the builders. Comparing and referring to the site as the “American Stonehenge,” these authors believed that Tiahuanaco was a religious site, agreeing with Squier, in result of the intense climate. A detailed description of the grand gateway was included with the interpretation of the central figure on its lintel as being the Deity of Light (Figure 3). The contributions that Stübel and Uhle made to the research of the ruins of Tiahuanaco is remarkable laying the foundation for archaeological research throughout all of the Andes, developing a systematic method that would be used from that point on.

After *The Ruins of Tiahuanaco in the Highlands of Peru* had been published, along with other books pertaining to the Incan Empire, the region of the Andes had gained great popularity. By the turn of the century, many people of higher education in both North America and Europe were intrigued by the unknown cultures referring to the rugged region as “exotic” (Janusek, 2008). The
unfamiliarity of Tiahuanaco would trigger a wave of individuals attempting to put an explanation to the structures existence.

Adolph Bandeleir was an archaeologist and studied ethnology throughout both of the American Continents. After studying predominately in North America, Bandeleir decided to switch gears and head to areas of Ecuador, Bolivia, and Peru. It is here where he began to research many of the ideas and conclusions established in previous years regarding the site of Tiahuanaco. Bandeleir (1911) broke the mold from previous ideas of the site in saying that he believed Tiahuanaco to not only be a religious site in which ceremonies were held, but that it was also the home to several thousand inhabitants being a major city as well. This idea was previously discarded due to the harsh climate that was thought to not be conducive to optimal living conditions, in addition to being overlooked due to the fact that there are no remnants of housing structures for everyday use. Bandeleir believed the reason for the absence of housing structures was most likely due to these structures eroding into the landscape most likely due to being built of materials unable to withstand the elements. He conveyed his new theories throughout his book, *The Ruins at Tiahuanaco (1911).* For the first time, the idea was presented that the site was a city inhabiting thousands of residents. Consequently there would be many individuals in later years that would attempt to prove or discredit such an idea.

The next two men to make notable interpretations of Tiahuanaco conducted their research of the site during the same time. Although they were
there together, they each had very different views and ideas about the structures and the civilization that had created them (Figure 4).

Arthur Posnansky studied the city and its remnants for over fifty years first arriving at the site in 1903. He was a prolific writer and researcher being the author of several books throughout his career. His most recent and astounding book is *Tiahuanaco, the Cradle of Man*. This book, containing four volumes was published over a number of years with the first publication in 1945 containing the first two volumes. The second was in 1957 containing volumes three and four. Posnansky’s ideas about the site and its culture were far from the general consensus. Because his ideas did not agree with the archaeological dogma, there were many that attempted to disprove him, assuming that his beliefs were absurd and irrational. Throughout *Tiahuanaco, the Cradle of Man*, Posnansky argues that the site was constructed approximately 17,000 years ago. Believing that this city is the point of origin throughout all of the Americas, Posnansky (1945) also includes that the city held a large and permanent population which was eventually abandoned after a prehistoric climate change had occurred. Posnansky’s methods in acquiring these dates of origin of the structures were based on astronomical alignments known as archaeoastronomy. Calculating involves the tilt of the earth’s axis known as the obliqueness of the ecliptic along with the placement of the structures and their angles towards the stars (Figure 5). This method of acquiring dates has been used throughout other areas of the world including Stonehenge, the Pyramids of Giza, and Chaco Canyon. Although Posnansky had many scientists that agreed with his calculations, there were far more throughout
his lifetime that viewed his theories as foolish. His dedication to his work and the passion he had towards the ancient city and its ruin is inspirational.

*Andean Culture History* would present a drastically different idea of when the structures at Tiahuanaco were created. Authors Wendell C. Bennett and Junius B. Bird worked together attempting to identify and calculate a time period of the cultures throughout the Andes. The dating technique that was used was carbon 14, or radiocarbon dating. The phases and dates that Bennett arrived at through his findings, including Early, Classic, and Decadent, and are the accepted dates of many scholars presently. Having a M.A. and a PhD from the University of Chicago, Bennett was well educated in his field collaborating with Bird, a Curator of Archaeology. Along with determining dates of the cities construction, they also suggested that the cultures influence was spread throughout other regions of the Andes, and not specific to the city itself (Bennett & Bird, 1964).

One of the key elements that made Bennett’s contributions outstanding was that he emphasized cultural unity throughout all of the Andes encompassing the overall environmental conditions along with the native technologies that were being incorporated.

Bennett includes descriptions of each of the structures of the city in *Andean Culture History*. The text states that he believes the structures themselves seem planned and carefully designed but rather their placement is odd referring to their relationship to one another as being haphazardly placed. During one of many excavations Bennett had conducted, he uncovered an enormous monolith that would come to be named after him, more commonly called a stela rather than
monolith by many scholars today. After investigation, the belief that Tiahuanaco served as a ceremonial center rather than a city was concluded by the authors having the same perspective as some of the earliest researchers including those of Squier along with Stübel and Uhle.

*Andean Culture History* is considered to be one of the best summaries of Peru-Bolivian prehistory written in a way that was popular among professionals of the field along with the common individual accepting great recognition. The book was originally written and published as an anthropological handbook for the American Museum of Natural History. The first edition of this book was published in 1949 containing three parts, with the first two written by Bennett and the third by Bird. After further investigations, the book was revised with its republication being printed in 1964 with corrections and new evidence added interpreted and changed by Bird, after Bennett’s death.

Shortly after the first release of Bennett and Bird’s work, around the year 1955, there was a great explosion of interest resulting in the gathering of research that prompted many to begin publishing their own ideas about the site. Hans-Dietrich Desselhoff, an archaeologist and anthropologist, along with Sigvald Linné, a professor of ethnography at the University of Stockholm, published their book *The Art of Ancient America: Civilizations of Central and South America* in 1961. Part one of this book was written by Linné focusing on areas of Mexico and Central America and the art and civilizations that created the works throughout this region. The second part of the book, written by Desselhoff, interprets art being produced from the Andes. The comparing of these two rather
different regions is shown when discussing many of the structures at Tiawanaco. Disselhoff (1961) writes of the probability that Tiawanaco was built as a city of pyramids comparable to the city of Teotihuacan, this based on the largest structure of Akapana. Many of the views and interpretations presented in the text about the ancient city of Tiawanaco are based on discoveries and knowledge from other ancient sites throughout Mexico and Central America presenting a rather different approach in the understanding of the perplexing city.

Dr. Geoffrey Hext Sutherland Bushnell spent over a decade living and exploring regions of Latin America. In 1965, his book titled *Ancient Arts of the Americas* was published in the United States. This book provides an abundance of descriptions of pottery and stonework found throughout the Andes discussing many phases of Pre-Columbian artwork. Bushnell stresses the similarities from works at Tiawanaco to works created by the nearby Pucara and Chiripa civilizations providing many examples. As a result of these similarities between different cultural groups, Bushnell (1965) concludes that expansion of the cities ideas and beliefs was present branching on the initial idea of expansion formed by Bennett. *Ancient Arts of the Americas* also provides excellent descriptions of the stonework at Tiawanaco with great detail identifying the cities creators as masters of masonry.

A professor of Anthropology at Columbia University, Edward P. Lanning, had been conducting research in Peruvian archeology beginning in 1956. In 1967, his accounts were published in his book titled *Peru before the Incas*. The book, being brief and concise, adds freshness to the topic of ancient cultures that had
lived throughout the Andes. Lanning’s attempt while writing this book was to recount the great amount of new information that has been accumulated about Tiahuanaco in recent years. Within a different framework than those seen previously, Peru before the Incas is an excellent source focusing on ancient cultures that thrived before the Incan Empire had ruled.

Working for the United Nations, Margaret Joan Anstee was quite influential throughout many regions around the world. Her career began with travels to South America encompassing areas of northern Columbia, Argentina, Chile, Peru and especially in Bolivia where she had spent a great deal of time. In staying there for nearly six years, Anstee felt that she needed to capture the essence of her experience and convey this to others. Bolivia: Gate of the Sun is a recollection of the author’s experiences and knowledge that she had obtained throughout her stay, being published in the states in 1971. Anstee (1971) believed that the civilization that created the ruins at Tiahuanaco must have attained a high degree of cultural development, along with holding and maintaining a complex social and political structure in order to have created such monumental and sophisticated structures. Bolivia: Gate of the Sun is well written and provides descriptions of the ruins from a much different perspective being that the author is not only a woman, but holds a position of authority and power, being a member of the government working towards worldwide peace and development.

In 1992, two great influences of Tiahuanaco would come together to write an essay for the book The Ancient Americans: Art from Sacred Landscapes, created alongside the exhibition at the Art Institute of Chicago. The essay titled
“Tiwanaku: The City at the Center” presents a plentiful amount of information about the geography, urban design, and the sacred thoughts encompassed at the city. Carlos Ponce Sanginés, one of the authors, has been researching the city since 1945 and has dedicated much of his life to preserving and understanding Tiahuanaco. Sanginés is responsible for founding and directing the Center of Archaeological Investigations in Tiwanaku (CIAT) and the National Institute of Archaeology in Bolivia (INAR). Much of the findings and information that is known today would not have been possible without the efforts put forth by Sanginés.

The other author of the essay “Tiwanaku: The City at the Center” is Alan Kolata, a professor of Anthropology and of Social Sciences at the University of Chicago. Kolata began researching Tiahuanaco in 1978, often times working alongside Sanginés. His research focuses on the climate and the environment on the altiplano and its effects on the agricultural system as a means to better understanding the culture. Many in the past have assumed that the climate was too harsh to provide adequate agriculture for an entire civilization, but Kolata is the first to study this further and provide investigations regarding the raised-field agriculture. Kolata’s (1993) investigations find that this system of farming is highly successful in the region producing an abundance of crops, healthy for the success of a large population.

The Tiwanaku: Portrait of an Andean Civilization is a book that was published in 1993 by Kolata being one of many of his writings. This book contains much of the research that Kolata had conducted involving the land and
resources of the altiplano and how these factors would have affected the
civilization of the ancient peoples that were living in the region at the height of
the city. He also studied the climate and environmental changes that have
occurred prior to and after the city was thought to be inhabited. Kolata (1993)
believed that the political economy was balanced consisting of herding, the use of
lake resources, and agriculture. The collective allowed for a substantial
population of permanent residents with the structures that are seen today being the
civic or ceremonial core. These structures at the center of the city would have
housed the elite and powerful, being a dominant ruling empire. He believed, like
Bandeleir at the turn of the century, that there were many people living at or near
Tiahuanaco accommodating anywhere from thirty to sixty thousand residents at
its height (Kolata, 1993).

Working with many people throughout his career, Kolata also collaborated
with Margaret Young-Sanchez in making *Tiwanaku: Ancestors of the Inca*. 
Published in 2004, this book had been created by the Denver Art Museum in
happening with an exhibit. Kolata’s contribution was an article titled “The Flow
of Cosmic Power: Religion, Ritual, and the people of Tiwanaku,” while the
majority of the book was written by Young-Sanchez. Young-Sanchez is well
educated in art having her PhD and holds the position of curator of Pre-
Columbian art at the museum. *Tiwanaku: Ancestors of the Inca* includes many
pieces of artwork created by the peoples. Along with descriptions of the
stonework like many previous writings about the site, this book also includes
crafts that were made by the ancient peoples. These crafts include textiles,
ceramics, and metalwork accompanied by descriptions in addition to excellent imagery of a number of the items.

John Wayne Janusek attained his doctorate in anthropology in 1994 from the University of Chicago. Since then, he has been conducting research throughout the Andes with a focus on the altiplano and its ambiguous city Tiahuanaco. While currently teaching at the University of Vanderbilt, Janusek has also been travelling to the site along with recording his interpretations in writings. His earlier book, *Identity and Power in the Ancient Andes: Tiwanaku Cities through Time*, published in 2004 discusses the origins, development, and collapse of the civilization. Janusek determines these stages of their civilization by attempting to address the social identities of the peoples. This book combines recent developments in social theory along with the archaeological record to better understand the civilization that once thrived at Tiahuanaco.

Shortly after the publication of *Identity and Power in the Ancient Andes: Tiwanaku Cities through Time*, Janusek wrote another book about the city. In 2008, *Ancient Tiwanaku* was published being one of the most up to date works on the subject of the site. This book is an excellent synthesis of existing research and is thought to be a better substitute and eventually replace the 1993 work of Kolata, *The Tiwanaku: Portrait of Andean Civilization*. Janusek focuses on the dynamic social and political development as being a major factor in its role throughout the Titicaca Basin. Unlike Kolata, Janusek (2008) does not believe that Tiahuanaco was a ruling empire driven by force. This idea was Kolata’s main explanation as to the occurrence of artifacts that were initially made from
Tiahuanaco throughout other regions of the Andes. Rather, Janusek (2008) determines that Tiahuanaco’s influence throughout other regions was of a social nature as well as serving an economic purpose. This was conceivable, in his eyes, with the use of camilid caravans making trading with farther regions easily accessible. Janusek’s books are well rounded regarding the ruins and the culture that created them.

Along with the books mentioned, there have also been textbooks that have included and written about the ruins of Tiahuanaco. In 1969, Luis Lumbreras wrote *The Peoples and Cultures of Ancient Peru* that would later be translated by Betty Meggers in 1974. This book was originally intended as a text for Andean Archaeology for the Universidad de San Cristobal de Huamanga in Ayacucho and later for the Universidad Nacional Mayor de San Marcos in Lima. Lumbreras created this work to give students a panoramic view of Central Andean archaeology. *The Peoples and Cultures of Ancient Peru* has an abundance of information of Peruvian antiquity and won the Julio C. Tello Prize for its outstanding contributions.

Lynn Mackenzie is the author of a textbook published in 2001 titled *Non-Western Art: A Brief Guide*. This book provides a very brief description of Tiahuanaco throughout Chapter 7 which covers the region of South America. Even though there is not an abundance of information, this is still a useful book in that it is concise in giving an overview of the city and its ruins. A nice feature of *Non-Western Art: A Brief Guide* is that concluding each of the chapters there are
possible points for discussion and review about the information presented along
with giving suggestions of other texts for further investigation on the subject.

*Art across Time: Prehistory to the Fourteenth Century,* the second edition
published in 2002, discusses art from around the world dating from the Paleolithic
era through the 1300’s identifying many of the precursors to the Renaissance.
Chapter 9, “The Early Middle Ages,” contains a section about civilizations living
from 1500 B.C.-A.D. 1500 throughout Mesoamerica and the Andes. Author,
Laurie Schneider Adams, discusses the structures and their placement along with
the iconography that is associated with the figures carved in relief on the Gateway
of the Sun. Schneider provides a brief description and insight into this ancient
city amidst many other cultures living at the same time as the people of
Tiahuanaco throughout different regions of the world. Establishing a greater
familiarity with happenings in other regions, Adams included the birth of
Muhammad (the founder of Islam), the era of the Vikings, and ruling of
Charlemagne to name a few.

Another textbook that was written including the stone structures of
Tiahuanaco was *Art of the Andes: from Chavin to Inca.* The author, Rebecca
Stone-Miller, attained her PhD in the History of Art from Yale University and has
conducted extensive research throughout her career of the Andes. She has also
published several articles on Andean art and architecture in addition to this
textbook. The second edition of *Art of the Andes: from Chavin to Inca* was
published in 2002. This book is easy to read and understand and is an excellent
guide for students interested in learning about the stone structures throughout the ancient city.

The ancient city of Tiahuanaco has been a source of mystery to many since its discovery. This review of the literature is an informative scope of the individuals who have dedicated their time to better understanding this ancient civilization and the books and articles that they have written. In the course of researching this site, it is essential to note how the interpretations regarding the ruins and their purpose has changed from their discovery to present day with the constant findings of new items through excavations. Although many of the authors may not agree on all of the characteristics of the civilization at Tiahuanaco, they due concur that the ruins were masterfully crafted and spectacular works of art. With further investigation of the site, it is hopeful that more knowledge is uncovered into the civilization and the purpose of the monumental structures and sculptures. An analysis of each of the structures and sculptures at Tiahuanaco should provide a better understanding of their grandeur.
Ruins
An Analysis of the Architectural Structures

The massive stone structures at Tiahuanaco have withstood many devastating influences since they were first built by the ancient civilization, some being approximately two thousand years in age. Going as far back as the time of the Incas, the city of Tiahuanaco and its structures was thought of as a sacred place. The Inca were unaware as to whom or how the structures of the city were created, but appreciated the impeccable masonry skills. They attempted to emulate this throughout many of the structures that they had built as a part of their own empire. They claimed that they were descendants to the ancient rulers of Tiahuanaco legitimizing their rule while enhancing their power and authority, as well as believing this site to be the birthplace of Viracocha, the creator god of the Incas (Janusek, 2008). Being that the Incas claimed the ancient city as part of their ancestry, it would not have been uncommon for them to travel and even stay at the site opening the possibility that the Inca could have changed or disrupted the original appearance of the ruins. The Inca peoples would be one of the first of many to influence the site making acquiring answers as to the purpose of the
structures that were created and knowledge of the people that created them far more difficult.

During the collapse of the Incan empire, due to the arrival of the Spanish in 1533, the Inca were forced to abandon Tiahuanaco leaving the ruins unprotected from intruders. Because the ruins of Tiahuanaco are so magnificent and impressive, they became the target for looters altering and destroying possible artifacts that would have revealed information about the ancient civilization. In addition to looting, some of the earliest explorers along with people studying civilizations gained interest of Tiahuanaco, many of which were unaware of the proper ways to conduct excavations of the ruins. It is likely that the early curiosity of these amateurs could have harmed the site rather than helped in understanding the structures (Janusek, 2008). For every encounter and disruption to the ruins, as minuscule as the change may be, they accumulate and hinder on finding information about the cities inhabitants.

Some of the most catastrophic damages to the ruins were caused from the emergence of the city, known today as La Paz. The city of La Paz is the de facto capital of Bolivia and was established shortly after the arrival of the Spanish. Its location is approximately 72 kilometers northeast from the ruins of Tiahuanaco (Map 5). The success of this now prominent and bustling city has had many devastating effects on the stonework of the ruins. Thanks to the efforts of Posnansky in defending the preservation of the ruins and to Sangines for founding the MNR and INAR to protect the site at Tiahuanaco in addition to other archaeological sites throughout the Andes, the site is now secure from further
destruction. Prior to their efforts there was no consequence or repercussions set in place for those who were attempting to harm or destroy the site. With no protection towards the preservation of the ruins, the stones at Tiahuanaco were used as a quarry in the constructing of many of the early buildings at La Paz (Figure 6A-B). Gunpowder was used as an explosive to blast a significant amount of the statues and stone into smaller pieces that were more manageable to carry and transport to the up and coming city. Many of the stones that were taken were used in the construction of cathedrals at La Paz, while some of the stones had even been used in the construction of individuals households throughout the city (Squier, 1877/1973) (Figure 7).

Perhaps the most flagrant devastation to the ruins occurred during the years 1902-1903. It is at this time that La Paz looked for an efficient way to gain access across the continent reaching as far as both the Pacific and Atlantic oceans for the purpose of trading goods and boosting the economy (Janusek, 2008). The city of Guaqui, on the shores of the nearby Lake Titicaca, was a key stop in the expanding of the infrastructure of La Paz (Map 6). The goal of branching distant regions resulted in the construction of a pervasive railway. The builders of the railway placed the tracks directly through the ruins of Tiahuanaco with no regard towards their preservation, while also mining many of the structures for their stones that they would go on to use to build the platforms and bridges of the railroad. The use of dynamite was present during this time in order to make very small rocks serving as ballast placed underneath the tracks. With complete
inadvertence towards the structures, much of the information that could have been gathered from these demolished stones is lost.

Although the ruins have endured a tremendous amount of destruction from its encounters with people, one factor that has helped archaeologists and researchers in maintaining the site is the environment. Elements of the environment have played a large role in helping to preserve the structures of Tiahuanaco. The winds have influenced the site by carrying soil, engulfing and burying the stones and structures, thus allowing for many of the items that were unseen in previous encounters to be well preserved. Left with many of the structures underground, many archaeologists would spend their careers uncovering these hidden works and digging for explanations.

With this carelessness and disregard to the preservation of the structures at Tiahuanaco throughout history, being as recently as the turn of the century, it is far more challenging to be able to fully understand and analyze the monumental structures. What is left of Tiahuanaco is a puzzle with many of the pieces missing, waiting to be put back together.

Each of the complexes at Tiahuanaco are breathtaking conveying a sense of strength, solidity, and stability that is impressive coming from people that are said to have no written language or use of advanced tools. Connecting each of the structures to one another were paths set in place to guide people into and through the structures allowing individuals to have an intimate experience with the site. Since the visitors were up close with the structures, this allowed the act of viewing to be more personal enabling the viewers to feel like they were part of
and one with the structures. Like many buildings today, the structures of Tiahuanaco would have continually been updated and remodeled or even rebuilt throughout the course of the success of the civilization.

The best preserved structure at Tiahuanaco since its construction by the ancient civilization is the Semi-Subterranean Temple (for the purpose of this paper, will also be referred to as simply the Temple). This complex has also been referred to as the Sunken Temple or the Underground Shrine by researchers. The Temple was built sometime during the Late Formative period which lasted from approximately 300BC up until the year 100AD, also being one of the oldest structures of Tiahuanaco (Kolata & Sangines, 1992). The sunken patio design was popular during this time in many of the surrounding areas of the Lake Titicaca region. In comparison to the other structures that were created at the site, the Semi-Subterranean Temple is quite small in size stretching to a length of only 28.5 meters with a width of 26 meters (Figure 8). In relation to all of the structures that have been identified at the site, the Semi-Subterranean Temple resides to the northeast.

The rectangular enclosure can be entered from a single staircase centered on its southern wall, being the only entrance or exit of the Temple (Figure 9). The descent into the Temple consists of seven steps leading below the surface of the ground, a total depth of 1.7 meters with the tops of the structures walls level with the ground. The entrance of the Semi-Subterranean Temple is flanked by two rather tall blocks of stone that exceed the height of the Temple, protruding from the earth (Figure 10). In addition to the two pillars located at the entrance, there
are several more incorporated throughout the enclosure having a total of fifty-seven pillars contributing to the overall design and structure of the Semi-Subterranean Temple (Figure 11). Made of red sandstone, each of the pillars used in this Temple are unique varying in size and height as well as placement appearing sporadically throughout the walls of the Temple. Traces of pigment found on the pillars indicate that at the time of use, the pillars would have been painted.

The walls of the Semi-Subterranean Temple display the exquisite masonry skills of the ancient civilization. These walls are made of several rows of various sized rectangular sandstone blocks. The blocks were fitted and carved so precisely that the use of mortar was not needed to hold the walls together. Emulating the staircase, the walls are comprised of seven rows of stones with the top row significantly smaller than the others. Included throughout the walls second and third rows from the bottom are carved stone heads (Figure 12). The insertion of heads is a surprising design element to not only this Temple but is also a unique characteristic throughout all of the Andes (Lumbreras, 1974). The structures at Tiahuanaco are the sole place in which this design has been found throughout South America to date (Young-Sanchez, 2004). The sculpted stone heads exceed the surface of the walls protruding into the center of the Temple where a few stone sculptures reside.

Each of the heads included in the walls were carved from a variation of stone colors and shown with different characteristics and facial features, perhaps representing ancestors from different ethnic groups (Janusek, 2008). A number of
the stone heads jutting from the walls of the Temple are sculpted with flattened faces. These heads have stylized facial features including large eyes and lips that are squared in addition to wearing headdresses (Figure 13). Among the many heads, included are a few that are portrayed as skulls with sunken eyes while there are even others that appear to resemble ghosts (Figure 14). Bearded head figures are a particularly unusual addition in that the Native peoples of the area do not have this facial characteristic. With no two heads sculpted exactly the same, there are a total of 175 heads that have been placed amidst the second and third rows of the Semi-Subterranean Temple attributing to the mystery of the ancient civilization.

With many different representations of heads included throughout the walls of the Semi-Subterranean Temple, there have been a number of theories as to the reasoning for their appearance by researchers and archaeologists. Perhaps one of the most plausible explanations is that this sunken court was the meeting place for various groups of people (Kolata, 1993; Janusek, 2008). Presenting the city of Tiahuanaco to be a place in which cultures of distinct ethnic groups congregated, represented in the diverse range of cut stone heads. The question then arises, how would ethnic groups have traveled to this remote and desolate location tucked between the massive Andes Mountains range at such an unbearable elevation? A convincing answer to this question has yet to be presented.

Another unique detail of the Semi-Subterranean Temple, in addition to the stone heads, is the inclusion of a drainage system. In order for the Temple to
withstand some of the torrential rain falls that occur in this region lasting between the months of December through March, the regulating of rainwater was essential to protecting the structure. The drainage system incorporated, helped to prevent flooding of the floor of the Temple, being made of earth, and eliminating standing water that could harm the stones of the walls and the sculptures. The knowledge and engineering skills that the ancient civilization attained is impressive and reflected throughout the workmanship. Located at the bottom of the walls around the perimeter of the structure are carved, stone channels placed to guide the rainwater into a cistern (Figure 15). From the collector, the water then travels through drains leading to the Tiahuanaco River. The slope of the channels around the entire Temple is a perfect two degree decline (Janusek, 2004). This downward sloping angle is the same degree that is used in modern day construction which is extraordinary that such a distant civilization in time was using the same methods as those presently used. The tools used today in producing such precision and dimensions are highly advanced indicating the knowledge, sophistication, and masonry skills of the ancient peoples to be ahead of their time, far greater than merely chisels.

Located directly to the west of the Semi-Subterranean Temple is the slightly raised platform known as Kalasasaya, translating to “place of standing stones” (or simply the Platform). This structure had been heavily damaged from its original construction due to theft with almost all of its stones taken and used for other purposes. By the turn of the century, the only aspect that remained at the site that was created by the ancient civilization was large stone pillars (Figure 16).
Even though the structure was not fully intact, with research provided from excavations, archaeologists were able to determine how the structure would have initially looked and worked vigorously towards its restoration. From the start of the 1960’s through the 1980’s, a full restoration of the outer and inner walls of the structure would be completed, resulting in the present appearance of the Kalasasaya Platform (Figure 17A-B). The restoration of the walls included small sandstone blocks that were fitted without the use of mortar between the original stone pillars, similar in appearance and construction to the walls of the Semi-Subterranean Temple.

Squier’s early sketches and descriptions of the Kalasasaya Platform were of some of the first made in 1877 (Figure 18). Before any restoration had taken place, the structure was simply comprised of large pillars and an entranceway that was framed by massive stones with a few blocks sporadically found around the site (Figure 19A-B). Defining the perimeter of the structure, the pillars erected from the ground in the form of a rectangle approximately 120 meters by 130 meters (Squier, 1877/1973). Like the Semi-Subterranean Temple, these large stones were irregular in size and height. The pillars at the corners of the Platform were the tallest and more definitively carved with squared edges in comparison to the other stones of the Platform. The spacing of the pillars is relatively even from one another, unlike the Temple, standing approximately 4.5 meters from each other when measuring from the center. The pillars of the north, south, and east walls were made of sandstone while the pillars of the west wall was made of andesite, likely due to the west wall being built at a later time than the others.
The pillars of the Kalasasaya Platform were part of the only apparent surface structure still left from the ancient civilization.

Through archaeological research and determination, Posnansky (1945) was able to determine the original construction and appearance of the entranceway to the Kalasasaya Platform (Figure 20). His conclusions were used in the making of the modern restoration of the entrance (Figure 21). Located near the center of the east wall, the entrance of the Platform faces directly towards the Semi-Subterranean Temple, with merely a pathway separating the two structures. Like the Temple, there are a total of seven steps that are bordered by large stones encompassing the entrance. Although, the pillars framing the stairs of the Kalasasaya Platform are much larger and more finely cut than those included at the staircase of the Temple. The steps of the entrance leading into the Platform are made of stone and are inset within its walls. Located at the top of the stairs is a stone doorway guiding viewers into the Platform. Monumental in appearance, the frame of the doorway is made of red sandstone along with sandstone blocks placed on either side of the frame having an outer finish that has been smoothed and edges with perfect right angles (Figure 22).

The entranceway gave access to the inner rectangular court of the Platform. The inner court would have originally contained a sunken court, but is no longer present today. Framing the interior and what would have been the sunken court are two walls located on the north and south sides built of alternating pillars and sandstone blocks. These walls extend from the entrance into the structure, ending in the middle of the Platform, only half the length of the outer
walls. Placed in front of these walls is a series of smaller rooms that were constructed with stone foundations. There are seven rooms in front of both the north and south walls, totaling fourteen, all of which are facing towards the interior of the court where the Ponce Monolith stands.

Similar to the Semi-Subterranean Temple, a drainage system was incorporated in the Kalasasaya Platform. Located throughout the interior, in front of the outer south wall of the Platform, is a series of channels and cisterns for rainwater. The rainwater would travel through a drain placed in the walls of the Platform to alleviate flooding (Figure 23). Because the Platform was elevated above ground, the drains were located towards the top of the walls allowing the water to free fall away from the structure before reaching the ground. Collecting the rainwater were basins dug below the surface of the ground that were made of stone. These basins interlocked transporting all of the water away from the structure, eventually draining into the river (Figure 24A-B).

The reasoning for the dimensions and placement of the Kalasasaya Platform has been a controversial topic among researchers since the turn of the century. The Platform is thought by some to have been built in accordance with astronomy and the alignments of the stars (Janusek, 2008; Posnansky, 1945; Young-Sanchez, 2004). Constructed with an east-west axis, the Platform is aligned to the cardinal directions, the first of many at Tiahuanaco with this orientation. The center of the entrance of the Platform aligns with the rising and setting of the sun on the spring and autumn equinox, as does the pillar in the center of the west wall of the Platform (Figure 25). Each of the pillars located on
the west wall align with the sun on relevant astronomical dates including the solstices and equinoxes. The placement and perfection of the alignment has led many to believe that the west wall of the Platform was created to be a calendar wall (Janusek, 2008; Kolata & Sangines, 1992; Posnansky 1945) (Figure 26).

This occurrence led Posnansky to delve further and is accounted throughout the equations that he had applied in dating the structure. Posnansky’s techniques and thoughts as to the purpose of the Kalasasaya Platform offer a scientific approach to identifying the structure revealing not only the awareness that the ancient civilization had of astronomy, but its importance to their culture. This idea is apparent throughout the construction of this elaborate complex. The appreciation and dedication to reflecting this element of the environment strengthens and is reflective of its importance to the ancient peoples while also displaying their high skill set.

The Akapana Pyramid is very impressive due to its immense size, being the largest of all of the structures that were created by the ancient civilization of Tiahuanaco (or simply the Pyramid). Located to the south of the Semi-Subterranean Temple and the Kalasasaya Platform, the Akapana Pyramid has a width of approximately 182 meters and a length of 194 meters, measuring from its longest points (Stone-Miller, 2002). To this day, only a small portion of the massive Pyramid has been excavated. With excavations and restorations presently occurring at the site, it is hopeful that a better understanding of the appearance and function of the Pyramid is soon to come.
Having a height of nearly 18 meters, this completely artificial earthen mound is the only place in which the two major geographical features of the region, Lake Titicaca and Mount Illimani, can be seen at the same time including a view of the entire city. Resembling the overall height and appearance of the nearby mountains, this artificial mound was constructed of earth, clay, gravel, and cut stone forming the shape of half of an Andean Cross, a symbol used prevalently throughout many works created at Tiahuanaco (Figure 27). The structure of the Akapana Pyramid consists of seven superimposed terraces that lead to its summit forming a high platform (Figure 28). The amount of terraces used forming the Pyramid is consistent with the number as the steps leading to the Temple as well as the Platform. The main staircase leading to the high platform of the Pyramid is located on the west side and during its use by the ancient civilization, would have been decorated with basalt sculptures and other artwork around its base (Figure 29A-B). It is possible that there is a second staircase located along the east wall but excavations to that part of the Pyramid have not yet been attempted (Stone-Miller, 2002).

The bottom terrace, or base, of the Pyramid was constructed of pillars and sandstone, similar to the walls of the Temple and Platform. The vertical pillars were placed at every corner and at 3.5 meter intervals from each other along the walls. Although the space between the pillars was filled with sandstone blocks like the Temple and Platform, the blocks were cut and fitted much differently for the base of Akapana. Having four rows of sandstone blocks between the pillars, the blocks located at the bottom of the base were carved straight with a smooth
finish translating from one block to the next, seen previously. Rising upward, the joints of the sandstone blocks are carved with rounded edges being a new technique used in the architecture of Tiahuanaco (Figure 30). Running along the top of the base terrace are longer horizontal blocks that hang slightly over the wall, similar to coping tiles used in modern architecture.

The facing of the upper six terraces of the Akapana Pyramid is considerably different than the architectural detail incorporated in the base. The amount of pillars that were integrated throughout the upper terraces has been significantly reduced along with the elimination of sandstone blocks with beveled edges. Rather the revetment consisted of large stone panels that would have been highly visible from the ground (Figure 31). Decorations to the stone panels included a number of crafts such as coverings made of textiles or metalwork. It is likely that at some point the adornment may have been directly painted on the stone panels or even carved from them in low relief (Kolata, 1993) (Figure 32). Excavations have also found stone heads similar to those of the Semi-Subterranean Temple, at Akapana that would have originally been inserted throughout the façade.

Highly rare is the blue-green gravel that was used for various aspects in the making of and appearance of the Pyramid. Covering the entire surface of the summit of Akapana, this gravel was rich in appearance. Throughout excavations, it was found that this colored gravel was placed in thin layers among the other materials that were used in the creation of the mound, being the only structure throughout the city to include this feature. This blue-green colored gravel is not
found near the city forcing the builders to have to travel great lengths in order to acquire the material, especially in such large quantities. The evidence that the ancient peoples went to these great lengths to include this feature attests to its importance and significance in the making of the structure. The emulating of the natural coloring of mountain features as part of their environment is apparent.

Another unique characteristic of the Akapana Pyramid is the extensive drainage system that was built throughout, far more elaborate than those included at the Temple and Platform. The summit of the Pyramid consisted of a high platform where in the middle was a sunken court in the shape of an Andean cross. Beneath this court is a highly sophisticated drainage system that far exceeds the purpose of mere utility, thought by Kolata (1993) to be over-engineered. This fascinating system combines the alternating of subterranean drains and surface canals. The furious amount of rainwater fallen during the rainy season is first collected from the sunken court of the summit. The rainwater then drains below the surface of the structure to a trunk line that was constructed of rectangular sandstone blocks joined together by copper clamps (Figure 33). These blocks were angled at a twelve degree downward slope in order to accommodate the rainwater and continue its flow to the next lower terrace. It is here that the drain leads to the outer wall allowing for the water to reemerge over the surface of the Pyramid. Traveling for a short distance of just a few meters over the surface of the terrace, the rainwater is then navigated back into the structure where in the process is repeated. After the rainwater makes the journey through the terrace of the Pyramid alternating underground and surface flow, the rainwater then exits the
structure through exquisitely crafted and precisely fitted tunnels (Figure 34). This unexpected feature of the Pyramid attests to the great amount of intellect and ingenuity often overlooked of the ancient civilization that shaped this intriguing city.

It is apparent through the detail and features that were included in the construction of the Akapana Pyramid, that the ancient peoples were emulating the nearby mountains. The mountains of the Quimsachata Range to the east were huacas, or considered a sacred shrine to the people of Tiahuanaco and an important aspect to their survival. Providing water to the city aiding in the success of the agriculture and in turn the civilization, the mountains represented life and fertility (Kolata, 1993). The scale of the Akapana Pyramid with its ascending terraces along with the colored gravel included throughout imitates the natural landscape of the mountains. The natural circulation and flow of rainwater traveling from the summit of a mountain to its valley would include draining below the surface, periodically reemerging, gushing and pooling forming streams and seeps along its journey which is mirrored through the highly sophisticated drainage system of the Pyramid. The symbolism portrayed in the structure of Akapana is astonishing displaying the significance and appreciation of the environment to the people of Tiahuanaco.

The Semi-Subterranean Temple, Kalasasaya Platform, and Akapana Pyramid are the most prominent structures to date at Tiahuanaco that have been identified and researched. Even though a significant amount of information has been gathered from these complexes, there are still excavations occurring that
may lead to a better understanding of the ancient civilization, especially at the Akapana Pyramid.

In addition to these structures, there are other complexes that have been identified throughout the city of Tiahuanaco. With the lack of man power and funding, many of these complexes are awaiting excavation. Such complexes include Kantatayita, La Karana, Laka Kollu, Chunchukala, Kheri Kala, and Putuni. These complexes are much smaller in size and contain less elaborate stonework than those previously described. Some of which were constructed partially in adobe that has since weathered from its original construction making understanding and restoration more challenging.

Throughout the city of Tiahuanaco, the ancient civilization portrayed the importance of their surroundings through the structures that they had created. Representing the skies, the awareness of astronomy and the aligning with the stars is seen in the Kalasasaya Platform. The Akapana Pyramid emulates the natural landscape of the land and conveys the civilizations appreciation towards the nearby Quimsachata Mountain Range. Lastly, the joining of all mankind can be seen in the variation of stone heads included at the Semi-Subterranean Temple. These structures combine giving a reflection of the civilization that created them conveying their beliefs while portraying the aspects of life that were essential to their survival, being one with the universe.

The ancient civilization of Tiahuanaco was highly intelligent and attained advanced skills seen throughout the finely crafted architectural structures that they created. Astonishing is the amount of knowledge the ancient peoples attained
with precision craftsmanship and calculations that mirror the advanced techniques used throughout present day construction. Along with the structures themselves, the sculpted artwork of monoliths and portals also reveals a glimpse into the lives of the ancient civilization while being aesthetically pleasing and displaying their remarkable masonry skills.
Sculptures
Monoliths and Portals

The ancient civilization of Tiahuanaco shaped their city and surroundings with breathtaking monumental structures that displayed the extraordinary craftsmanship, ingenuity, and determination of the people. This dedication and attention was also emulated throughout the artwork that was created for many of the structures at Tiahuanaco. An analysis of the artwork that was included and placed at various complexes throughout the city adds to the interpretation and understanding of the meaning and function of these buildings, ultimately obtaining knowledge about the people that created them. This section provides descriptions and interpretations of several works of art that were created by the ancient civilization of Tiahuanaco.

With the inhabitants of the city of Tiahuanaco thriving nearly two thousand years ago, much of the artwork created has long been missing due to looters or was crafted from materials that were unable to withstand time and weathering. Some of the only works of art created by the ancient peoples that are known today, are works made of stone because they are more likely to persevere over the elements. The carving of stone was a skill that the people of Tiahuanaco
had mastered over the course of their existence. Displaying a great amount of
detail and precision in the works that they created is apparent throughout many
areas of their city. The artwork made of stone by the ancient civilization that has
been found at Tiahuanaco to date includes statues resembling pillars and
gateways. These incredible works offer insight into the beliefs of the city while
displaying the creativeness and artistic capabilities of their sculptors.

Placed at the center of the Semi-Subterranean Temple were a number of
stone sculptures. Included were sculptures that were created before the rise of the
city of Tiahuanaco, accounting for three out of the four sculptures placed at the
Temples center. These older sculptures were created in the Yaya-Mama style, a
religious tradition that was present in the Lake Titicaca region before the rise of
Tiahuanaco, dating as far back as 800-200BC (Young-Sanchez, 2004). Being
created by the ancestors of the Tiahuanaco, their placement at the center of this
structure is intriguing.

The taller of the elder sculptures is known today as Stela 15 (Figure 35).
This anthropomorphic sculpture is four sided and carved in low relief from a
solid, red sandstone block. Simple in design, the front of Stela 15 represents a
bearded male figure. The face of the figure is rather large accounting for two
thirds of the entire sculpture with its nose and profound eyebrows forming a T-
shape (Figure 36). Circular in shape while appearing to be staring intently, the
eyes of the figure are quite large. The figure’s mouth is displayed in the shape of
an oval with thick lines defining its perimeter resting between a mustache and
beard, a characteristic that was not present among the native people of this region.
The middle section of the front of Stela 15 consists of the figure's arms and hands. Carved in low relief, the left arm rests across the figure's crest with the right across its torso. Appearing at the figure's waist is a horizontal band where beneath, the image of two felines is carved. Positioned confronting each other, these felines are displayed with square frontal heads resting atop profiled bodies completing the frontal design of the structure. The back of Stela 15 is highly eroded and contains no visible carvings aside from what seems to be human legs carved into the bottom of the sculpture. The appearance of undulating serpents and small animals attribute to the carvings located on either side of Stela 15 (Figure 37).

Along with Stela 15, there are two other sculptures located at the center of the Semi-Subterranean Temple that were sculpted before the rise of the city of Tiahuanaco. Rather small in size, these two sculptures are approximately half the height and width of Stela 15 (Figure 38). A significant amount of erosion has damaged the outer surface of these red sandstone blocks. Due to the significant amount of weathering, it is unclear as to the original appearance of the carvings. The presence of these sculptures at the center of the Semi-Subterranean Temple indicates that they were a significant aspect to the ancient meeting place representing the importance of ancestors and of tradition to the people of Tiahuanaco.

The largest of all of the sculptures that have been found at the city of Tiahuanaco is known today as the Bennett Monolith. Named after its discoverer, this massive sculpture was uncovered from the Semi-Subterranean Temple in 1932 by the well known archaeologist Wendell C. Bennett. At the time of
discovery, this gigantic sculpture was found lying down but would have initially been presented upright facing west towards the entrance of the Kalasasaya Platform. This sculpture was moved to the city of La Paz shortly after being discovered where it stood for 70 years as part of an open museum that was created in honor of the ancient civilization of Tiahuanaco. Located at the Plaza Tajada Sorzano in front of the football stadium of La Paz, the museum was placed among the buildings and urban setting of the populated city (Figure 39). In 2002, the Bennett Monolith was returned to the city of Tiahuanaco where it stands indoors at the museum that was built for the site, rather than at the center of the open Semi-Subterranean Temple (Figure 40).

With a height of 7.3 meters and a width of 1.3 meters, the Bennett Monolith towers over the elder sculptures at the Temple (Figure 41). Sculpted from a single block of stone, the monolith has an enormous weight of over 20 tons. The statue presents an anthropomorphic figure displayed in the typical attire and style of the ancient Tiahuanaco dated to have been carved during Phase IV, or the Classic Period termed by Bennett (Lumbreras, 1974). Due to erosion, many of the carvings on the sculpture are less precise than would have initially been portrayed. The carved headdress worn by the figure is large and square in shape containing a broad band that stretches across the figures forehead. Resting across the waist of the Bennett Monolith is a raised band alluding to a belt, similar to the band of the headdress. Both the headdress and belt contain decorative carvings of fish, condors, pumas, and llamas. Ring shaped circles are carved on the figures short pants replicating actual clothing found on textiles and ceramics at the site.
The legs of the figure are defined with a shallow indentation. This standing human is shown holding a kero in its left hand, a ceremonial drinking cup, while the right hand grasps a staff. Both the arms and hands are carved in low relief across the midsection of the figure.

The designs on the monolith were intricately carved displaying rich iconography. Many of the motifs included in the detail of the sculpture are associated with flowering plants. One in which is the figures feet that were transformed into plants. With numerous representations of distinct flowering plants present among the imagery on the sculpture, both cultivated and wild, the importance of agriculture to the people of Tiahuanaco is unmistakably seen throughout this sculpture. Also prominent throughout the Bennett Monolith is imagery of llamas addressing the relationship between herding and agriculture (Janusek, 2008). The association of llamas with the success of the agriculture and plant life is displayed and would have been carried out in the city through the alternating of crops and animals in the fields. The preparation and adaptation to the environment and knowledge of this process is reflected throughout the designs of the Bennett Monolith with its immense size magnifying its significance.

The choice of sculptures that were placed at the center of the Semi-Subterranean Temple is quite interesting. By incorporating these four sculptures together, it is as though the ancient civilization of Tiahuanaco has found a way to bring forth previous ideas and beliefs of the people with new elements. The immense height of the Bennett Monolith shows that the new way and traditions far supersede the previous beliefs of their ancestors. Placed in a way that is
telling, it is almost as though the ancestors are now worshipping the newer
sculpture of Tiahuanaco, possibly to legitimize their rule. The sculptures of the
Semi-Subterranean Temple bring the beliefs and traditions of the past to the
present where they are viewed and worshipped by all of mankind, shown by the
sculpted heads incorporated throughout the Temples walls.

At the center of the Kalasasaya Platform, stands a sculpture very similar to
the Bennett Monolith although on a much smaller scale (Figure 42). The name
Ponce Stela was given to the sculpture after being discovered by archaeologist
Carlos Ponce Sangines. While standing at the center of the Kalasasaya Platform,
the Ponce Stela faces to the east with a direct view through the entrance of the
structure (Figure 43). Throughout the use of the ancient city, the two similar
sculptures would have stared directly at one another from several meters away
located at two separate complexes, further associating their bond.

One third of the size of the Bennett Monolith, the preservation and overall
appearance of the Ponce Stela is in excellent condition displaying the exquisite
detail and carving skills of the ancient civilization (Figure 44A-C). The physical
features of the Bennett Monolith were replicated in overall appearance of the
carving of the Ponce Stela including the shape of the human figure, and the attire
of a headdress, belt, and short pants. Setting the Ponce Stela apart from the
Bennett Monolith, in addition to its overall size, is the imagery that was carved in
low relief. The Ponce Stela displays imagery of fishes associating with the lake
and river resources that were essential to the survival of the ancient civilization
(Janusek, 2008). Also shown with imagery of the lake resources is the monolith
El Fraile (Figure 45). Significantly eroded, El Fraile was found at the corner of the Kalasasaya Platform as well. Both of these sculptures were carved to display the importance of the surrounding environment to the survival of the ancient peoples.

Another form of artwork, in addition to the various sculptures that have been found at the site of Tiahuanaco, is gateways that are carved of stone. Many of these gateways are quite large in size, carved from a single stone. The intricate detail that is carved into various aspects of the gateways at Tiahuanaco is breathtaking.

The most well known piece of all the structures and artwork found at the site of Tiahuanaco is the monumental Gateway of the Sun (Figure 46). The fame of this gateway derives from is beautifully executed frieze. Massive in size, the Gateway of the Sun was carved from a single block of andesite. Weighing an estimated ten tons, the Sun Gate has a height of approximately three meters tall while its length being four meters. Like many of the items at Tiahuanaco that have been dismembered or moved over the years, the Sun Gate was found at a far corner of the Kalasasaya Platform but is thought to have originally been part of a series of doorways located at the temple of Puma Punku, a site located approximately one hundred meters southwest of the Akapana Pyramid (Stone-Miller, 2002). Kolata (1993) believes that the Sun Gate is the most famous stone sculpture of the entire ancient Andean world.

The intricate detail and design applied to the creation of the Gateway of the Sun is astounding. The gateway consists of two vertical posts with a lintel
spanning across the opening. When viewing the front of the gateway, the posts are smooth and flat to the same height of the top of the opening of the doorway and for the width of the structure. There is the addition of two nooks, one being on either side of the gateway placed midway from top to bottom and near the edge of the outer sides. The doorway has a double jamb with a slight detail at the top of the opening (Figure 47). This portion of the gateway is rather plain in appearance allowing for the attention of the viewer to be brought upward to the frieze that is craved in great detail.

The frieze of the Gateway of the Sun has many different smaller images that combine to create an exquisite overall illustration. The entire frieze itself is created slightly wider than the posts allowing for an overhang reiterating its importance. The way in which the frieze was carved gives the appearance of laying a textile over stone which was a common way to display images and figures on stone by the ancient civilization (Disselhoff, 1961). The entire frieze is carved in a low relief with the central figure, frontally faced projecting outward more so than the rest, accentuating its importance (Figure 48). Along with projecting outward, the figure located in the center is also much larger than all of the other figures emphasizing its dominance. Since the central figure is wearing a radiating headdress, this indicates that the figure is a sun god or it also thought to be the most powerful shaman (Adams, 2002). The sun god is holding in one hand a spear thrower and in the other hand arrows, both with the heads of birds on the ends imitating there flying ability. He stands atop a triangular step form that is carved in the same relief as the rest of the frieze giving the illusion and
appearance that he is hovering over the steps (Figure 49). The association with the Akapana Pyramid and the highest point to the sun is implied (Stone-Miller, 2002). The frontal view of the central figure accentuates authority opposed to the other figures throughout the frieze. Along with the central figure, there are also many smaller figures displayed throughout the frieze of the Gateway of the Sun.

On either side of the central figure are rows of winged attendants accounting for the majority of the frieze. Each of the top three rows of the frieze contains eight smaller squares on either side of the central figure with a winged attendant in each square. Accompanying the central figure, there are then a total of forty eight “angels” (Lanning, 1967). The top row and the third row are almost identical displaying figures in a profile view with human faces that are winged and kneeling all facing the central figure (Figure 50). These figures are also holding single spears, opposed to the central figure holding two spears. The second row also contains figures that are armed with single spears, winged and kneeling in profile view but rather than having human heads, they obtain heads of a bird being either a condor or a falcon (Figure 51). The figures in all three of the rows, on either side are mirror image of one another facing towards the larger central image.

The entire bottom row of the frieze does not include any figures of winged attendants, rather a design. The design includes a lined pattern where on the ends are the faces are birds, with the inclusion of small faces of the same appearance as the larger central figure. All of the figures displayed throughout the frieze of the Gateway of the Sun combine to create an astounding overall composition
representing the relationship of worshipping and attention given by the ancient peoples towards the cosmology, specifically the sun.

Each of the stone sculptures that were created and placed throughout the ancient city of Tiahuanaco displays the extraordinary skills that the ancient peoples attained. The unique and exquisite imagery displayed demonstrates the style along with expressiveness of the peoples. The detail and sheer size of the sculptures created stresses the importance of the content that is represented. Various elements of the environment are represented displaying the land as the relationship between agriculture and herding, the appearance of lake and river resources, and the power of the sun. Each of these elements combined demonstrates the worshipping and appreciation of their surrounding environment as an essential aspect to the lives of this ancient civilization.
Defining Tiahuanaco are the stone structures that were built throughout the city. Located approximately one hundred meters southwest of the prominent structures at the center of Tiahuanaco, are the ruins of Puma Punku (Figure 52). This site is one of the most inexplicable archaeological sites in the world, with many attempting to find answers regarding the stones that lie there. There has been a great deal of research that has occurred at Puma Punku in recent years. Much of which has resulted with further questions regarding the ancient civilization rather than acquiring answers.

Puma Punku is thought to have been built during the height of the existence of the ancient civilization, most likely between the seventh and eighth centuries (Kolata, 1993). The site of Puma Punku consists of a western court and a central esplanade, both of which were built without walls being open. Other structures at the site include a walled eastern court in addition to a platform mound containing terraces. Of these structures, the terraced platform mound is the only structure that has not been completely destroyed. Many researchers have
attained their knowledge and interpretations of Puma Punku from this structure (Kolata, 1993; Janusek, 2008).

Referred to as “Akapana’s Twin,” Kolata (1993) believed that the site of Puma Punku contained a modern version of the most imposing structure built at Tiahuanaco. Similar in many regards to the Akapana Pyramid, the ruins of Puma Punku display the progression of masonry skills and engineering of the ancient civilization from the time between their constructions.

The platform mound at Puma Punku is an artificial earthen mound containing three superimposed terraces (Figure 53). The shape of which is a rectangle with the addition of two wings protruding to the north and south along its east wall (Figure 54). Including the wings, the length of the structure is 210 meters from north to south while reaching 132 meters measuring from east to west. The height of this structure is nearly five meters tall. Located at the summit of the mound is a platform with a sunken court, seen throughout many structures at Tiahuanaco. This sunken court has a depth of two meters contained in a square perimeter measuring 30 meters on each side. Beneath its surface is a drainage system similar to that of the Akapana Pyramid with the alternating underground and surface flow of the rainwater with drains (Figure 55). The Gateway of the Sun would have stood as part of the staircase and entrance to this mound. Traces of pigments in an array of colors are found on many of the stones indicating that this structure would have initially been painted.

According to Kolata (1993), the city of Tiahuanaco was divided into quadrants that were defined by an east-west axis along with northern and southern
segments representing areas of their known world. With this division, the terraced mound at Puma Punku is interpreted as the principal complex of the south, while the much larger Akapana Pyramid constitutes the principal complex to the north. Each of these mounds is then the center piece amongst other, less sophisticated structures.

The conditions of the surrounding structures at Puma Punku are so devastated that ascertaining their original appearance and function is highly unlikely (Figure 56A-B). The stone blocks and slabs located here are strewn sporadically across the land in a chaotic fashion (Figure 57). It is unknown as to the event that caused these blocks to become so devastated and jumbled in their present state.

Another reason that makes determining the original appearance so challenging is that many of the stone blocks found at the site were carved with precisely the same dimensions. The prefabrication of stones is a new technique that was not previously used by the ancient civilization of Tiahuanaco. Due to the stone blocks having exactly the same dimensions, all of the blocks would be able to be interchangeable from one another making determining their original position extremely difficult.

One of the types of blocks that were found at the site of Puma Punku is carved in the shape of the letter H on one side while the other side is carved as a T (Figure 58). These blocks interlock and would have been precisely fitted with each other resulting in large monumental walls (Figure 59). The quality of the cutting of the material is remarkable shown with perfection. The surfaces of these
blocks are flawlessly flat while having exact ninety degree angles throughout at each jamb and groove. With the use of modern technology, the perfection that is seen in these stones is unable to be replicated. The process and technologies used by the ancient civilization to create these blocks with such precision in unknown by modern scholars. This being said, the perfection and amazingly constructed stone blocks attests to the advanced knowledge that this distant civilization attained, such a fete being presently unachievable.

The sizes of many of the blocks found at Puma Punku are enormous. The largest stone found at the site weighs 131 metric tons with several others around 100 tons. It is unclear how the ancient civilization of Tiahuanaco moved these massive stones to the site from a quarry located over 15 kilometers away. Of the massive stone blocks and slabs found, all were carved from single, solid pieces of sandstone, andesite, or diorite. Diorite is an extremely hard stone with there being only one material that is able to penetrate and cut through its surface, diamond. In this region the presence of diamonds is absent. The technology needed to construct these blocks at Puma Punku is far more advanced than this “primitive” civilization is thought to obtain.

Many questions arise from the stone ruins that are located at the site of Puma Punku. Not only is there the question as to how the ancient civilization was able to construct such perfectly carved stones, but also the question arises as to how these stone became to be haphazardly scattered throughout the field. Although the majority of the site is ambiguous, it is clear to see the correlation
between the Akapana Pyramid and the pyramid of Puma Punku, the two principal complexes of the ancient city.

With all of the knowledge and advanced technologies that are known today, the replication of perfection that was crafted by the ancient civilization is unattainable. The ingenuity shown in the construction allows the idea that the ancient civilization was highly sophisticated, able to plan, and attained knowledge of logistics. This interpretation strengthens the idea that the characteristics of these ancient peoples and their knowledge constitute them as being one of the greatest civilizations.
Conclusion

The ancient civilization of Tiahuanaco is perhaps one of the greatest and most important civilizations throughout history. Ironically, most individuals today have never heard of this city or of its ancient inhabitants. Much of the reason for this is because so much of the city has been destroyed. The complete disregard towards the preservation of the structures throughout the years is discouraging for those attempting to learn about the fascinating civilization and all that they achieved.

There have been several interpretations regarding the site of Tiahuanaco since its discovery. Believed by many early researchers, the city was merely a ceremonial center for pilgrimage placed in an uninhabitable location (Bennett, 1964; Stibel & Uhle, 1892; Squier, 1877/1973). The city was also viewed as an urban capital governed by military that expanded their ideas and beliefs through force in areas surrounding the region (Bennett, 1964; Bushnell, 1965). Yet another perception views the city as a balanced political and ritual center encompassing an enormous population (Bandelier, 1911; Kolata, 1993; Janusek,
While each of these theories may partially attribute to the explanation of the city and its ruins, none of them adequately describes the civilization with certainty.

What is known for certain is that the city of Tiahuanaco served as the capital of one of the earliest and greatest cities of not only the Andes, but throughout all of pre-Columbian South America. It is also clear that the ancient civilization that inhabited the city was highly sophisticated, shown throughout the ruins that were left. This civilization was successful and was able to thrive throughout the region for several centuries. The cultural beliefs and artistic capabilities of the people extended beyond the city itself, with their influence cast widely to many other regions. The technologies and structural achievements displayed throughout the ruins laid the foundation for one of the largest and most powerful empires of the region, the Inca.

Given the architectural structures and sculptures that were created, I believe that the ancient peoples of Tiahuanaco had strong beliefs in specific areas of their lives reflected throughout the craftsmanship and art. The ingenuity and ambition that was required to create such extremely complex and highly dynamic stone works is incredible.

It is clear to see the powerful relationship between the ancient peoples and their surroundings of the natural environment. This relationship can be seen in the emulating of the production of artificial landscapes while incorporating the symbols and natural elements into monuments. In such complexes as the Akapana Pyramid and the temple at Puma Punku, a great amount of detail was put
forth to include each artificial representation of natural features. The inclusion of highly intricate water systems designed to imitate the natural flow of rainwater throughout the mountains is impressive. Other features include the colored gravel which required the traveling of great distances to obtain. The sculpting and imagery of the Bennett Monolith reflects the environment in areas of flowering and the growth of the population through the cultivation of plant and agriculture. The appreciation towards the natural environment and incorporation of these elements into the production of monuments by the ancient civilization is presently seen through the stonework that is left. This translation was likely a large extent of their ritual adoration.

The city of Tiahuanaco was a place of social encounter and interaction. The importance of individuality and diversity among the members of the civilization is portrayed in the exquisite craftsmanship of the sculptures. Sculptures that were created incorporate natural features along with portraying the diverse interests and backgrounds of individuals from the ancient civilization. Artistically the skills displayed, far exceeded their time.

The abundant knowledge of cosmology was prevalent and reflected in the precise measurements and creation of sculpted figures that enhanced its importance. The exactness of the alignment of the Kalasasaya Platform with the stars is remarkable. The awareness of important astronomical occurrences such as solstices and equinox is identified and emulated in the placement of stones resulting in a calendar wall. Also portrayed in greatness is the adoration of the sun. This is reflected in the massive and awe-inspiring stone sculpture of the
magnificent gateway. The praise of this figure, displayed in the imagery, would have been emulated by the peoples of Tiahuanaco.

The combining of the natural environment, individuality and diversity, and cosmology are attributes reflected in the stonework throughout the city of Tiahuanaco. The sophistication, determination, and knowledge required to create such monumental works are the result of one of the greatest civilizations to date. The material record and its symbolic significance far outlive their time of imperial greatness (Janusek, 2008). The further discovery of information and the workings of these ancient peoples and their advanced technologies will strengthen future generations. With excavations currently being conducted at the site, it is hopeful that even more knowledge is attained in order to better understand the ancient peoples and their great accomplishments.
Works Cited


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![Map of railway linking La Paz to Lake Titicaca and the coast]