# The role of plants in Moche iconography

## An analysis of fineline paintings on stirrup spout bottles

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## 1. Introduction

Since the ancient inhabitants of Peru did not have a writing system at their disposal, they used other ways to express themselves and to spread their messages. The Moche of the coast are famous for their pottery, which consisted of beautifully modelled vessels as well as fineline paintings with a high naturalistic degree.
In recent years, much research has been done to identify the personages, scenes and objects depicted on these pots. However, as far as I know, little attention has been paid to the role of plants in these fineline paintings.
The purpose of this study is to shed light on the role of plants in Moche iconography. Questions that will be answered are:

- What plants are depicted?
- In what scenes do the plants occur?
- Are the plants depicted in a uniform way?
- Are there recurring numbers concerning the amounts of plants, their leaves or their branches?
- For what reason could the plants be put there?

I will first describe the geographical division of Peru, since I believe some knowledge of the Peruvian landscape is required to understand their world. After that, I will describe the early inhabitants of the coast: in short I will tell something about the forerunners and the successors of the Moche and also summarize the most important aspects of this remarkable society. Attention will also be paid to the iconography and the distinction in chronological phases.

An overview of the research history will follow. I will first outline the important archaeological contributions that were made in this region in the last century. Apart from this I will show the current condition regarding ethno-botanical research and describe how the disciplines of botany and archaeology cross. The few researchers that operated in the field of ethno-botanical research and plant iconography will be discussed and the different thoughts about the role of plants will be presented.

Then I will discuss the different iconographic approaches that are used in the past decennia. Finally, the iconographic method of Castillo will be outlined, which will be the base of my research. His distinction in three phases (pre-iconographic analysis, iconographic analysis and discussion) will be applied to 95 roll out drawings and steer the analysis in the right direction.

In the first stage the realisation of the corpus will be described. Furthermore, the focus in this stage is on the medium of communication. No attention will be paid to the

drawings yet, but the production, organization and distribution will be examined to understand the role of pottery in Moche society.
In the second stage an analysis will be conducted, based on 95 roll out drawings of phase III and IV. The first two phases are excluded since complex scenes with plants are not present in these phases. The last phase is excluded as well, as the drawing style has developed in such way that comparing plants is difficult. Due to a lack of provenience data, no attention will be paid to the different valleys that are part of the Moche landscape.
Five plant types are distinguished on the basis of their physical appearance, which will all be identified and described. This description exists of three parts: a general description of their physical appearance, a description of its uses and an iconographic description.

In the third stage the individual plant types will be compared and discussed, in order to look for idiosyncrasies and similarities. The sub questions stated above will be answered, ultimately leading to resolving the main question: what was the role of plants in Moche iconography?

## 2. Geographical division

Peru is famous for its diversity in geographical areas and can be divided in three zones: the *selva*, the *sierra* and the *costa*. This division of the country is illustrated in figure 1.


*Figure 1: Division of Peru in geographical zones. Green corresponds to the* Selva, *brown to the* Sierra *and white to the* Costa *(Kalman and Schimpky 2002, 7).*

The *selva* occupies 3/5 of Peru and can be found in the northern and eastern parts of the country. Dense jungle forests are formed around the Amazon and the smaller streams that join this large river. The *selva* is warm, humid and wet: it is a place where thousands of animals dwell. Sloths, jaguars, anaconda's, tapirs, lizards, monkeys and a wide variety of birds and insects are living here, separated from humankind.
A rich vegetation is present as well. Plant life is composed of multiple layers. The large treetops can be found on top and are also called canopies. These large trees can become as high as sixty meters. The layer below is destined for shorter trees, vines and other plants. The bottom is covered with moss and small plants (Kalman and Schimpky 2002, 8).

The s*ierra* is the mountainous inland, which is inhabited by half of the Peruvian population. Since the Inca period, terraces have been created to cultivate crops.
The *sierra* is characterized by the high and rugged Andes, the longest mountain chain in the world. The highest mountain is the Huascarán, an extinct volcano of 6770 meters high. This zone is located between the *costa* in the west and the *selva* in the east. There are grasslands on the slopes of both sides, which are called *puna*. They stretch out into wide plateaus, the *altiplano*, which consist of hills, valleys, forests, canyons and grasslands and form the habitat of chinchillas, condors, deer, vicunas and alpacas (Kalman and Schimpky 2002, 9).

The last geographical zone is the *costa*, a desert that is 2500 kilometres long and runs parallel to the coast of the Pacific Ocean. The average width of this sandy desert is thirty to fifty kilometres and only in the north, in the Sechura desert, is it also hundred kilometres wide (Rauh and von Bismarck 1996, 11). The *costa* of Peru is one of the driest areas in the world, characterized by flat plains, shifting sand dunes that are called *lomas*, rough hills and some trees.

The climate of the *costa* is cool and dry. The cold Humboldt stream causes a lack of rain, since it ensembles too little moisture that the winds can bring towards the mountains. However, they do spread a dense mist that is called *gurúa*.

In the winter period, the desert is adorned by colourful *loma* vegetation, which comprises plants that grow each year and dry out after winter. There are also plants that live year-round. These can be divided in two groups: the cacti and the bromeliads (Rauh and von Bismarck 1996, 17).

There are fifty-two rivers that cross the desert strip. Only ten of them are filled with water throughout the entire year. Along these rivers fertile oasis have originated. Since time the inhabitants of Peru use these rivers to irrigate the land and cultivate crops (idem).

## 3. Early inhabitants of the coast

Despite the barren circumstances mentioned above, the *costa* knows a long occupation history and the first traces of settlement are 11.500 years old (Jones 2008, 95). The first culture that flourished in this desert-like region, is called Chavín. Their famous settlement, Chavín de Huantar, was built after 900 B.C. This culture, with their own distinct materials, fell apart around 300 B.C. and new cultural styles developed.

One of these cultures was the Moche, which was prevalent in the valleys between Lambayeque and Nepeña. From north to south this area covers 240 kilometres and from east to west 50 kilometres. In figure 2 the distribution of the Moche is shown.


*Figure 2: Distribution of the Moche, depicted in yellow. (http://worldhistoryto1500.blogspot.nl/2010_11_01_archive.html)*

The Moche people gained food by agriculture, hunting and fishing. The water canals and aqueducts helped them to irrigate the lands on which they grew a wide array of plants. The Moche people created various objects, often with a political and/or an ideological message. These objects were made from clay, wood, stone, gold, silver and alloys. They were skilful architects as well, creating temples made of dried clay. Trade was also an important activity and the Moche people even created boats to travel over sea, to exchange turquois and exotic shells.

After centuries of prosperity the Moche faced turbulent times between 500 and 750, ultimately leading to a collapse. A combination of various causes, under which environmental changes and political instability, may have led to the termination of this culture (Diamond 2013, page unknown, chapter 9).

## 4. Research history

For a long time no mention was made of this remarkable culture, until Max Uhle came in contact with the remains from the Moche Period in the late 19th century. He made drawings, gathered pottery and proposed that this culture was older than the Chimu culture (Chapdelaine 2011, 192).

Another man who was of great importance for the establishment of the Moche studies was Rafael Larco Hoyle. He grew up in an estate that was surrounded by archaeological remains. Although he had studied agronomy, he conducted valuable archaeological research between 1930 and 1960 (Quilter 2011a, 33). He used the term 'Mochicas' for the people, instead of the customary term 'Proto-Chimú'. Furthermore, he worked out a sequence existing of five phases, in which the stylistic changes of the pottery were described (Quilter 2011a, 34). He also organized the first academic meetings and conferences for colleagues from the same field. Larco Hoyle considered the Moche as a centralized state, with its capital in the Moche Valley, in Huaca de la Luna and Huaca del Sol (Larco Hoyle in Quilter 2010, 227). Larco Hoyle believed that the population was led by religious and military leaders, who had gained power by conducting rituals and by accumulating military power (idem).

At that time this model was accepted by the members of the Virú Valley project, which was led by Gordon R. Willey in the forties and tried to get insight in settlement patterns. This research method, focusing on settlement patterns, was a new breakthrough in archaeology worldwide. The theory concentrated on the nature of buildings and physical planning. These settlement patterns were formed as a result of the needs of a group of people and therefore was the starting point for the interpretation of an archaeological culture (Sabloff 2004, 407-8). It was an advantage of this project that it did not concentrate on the Moche culture, but investigated the whole occupation history of the valley (Quilter 2011a, 34).

In 1982 the primary administrative centre of the Moche was located by Theresa Lange Topic. She considered Huaca del Sol, located near Trujillo in the Moche valley, as the centre of an expanding state. This means that she still stuck to the theory of Larco Hoyle. She also believed that the temple located near Huaca del Sol, Huaca de la Luna, served a religious purpose and was an important centre for the Moche as well (Topic in Quilter 2010, 227).

However, by the discovery of royal tombs in Sipán one started to doubt Larco Hoyle's hypothesis of a centralized state. Walter Alva discovered a great wealth in a relatively small ceremonial centre, while this site was located far away from the Moche valley (Alva

in Quilter 2010, 227). There seemed to have been at least two important centres instead of one.

In 1994, Luis Jaime Castillo and Christopher Donnan posed that the pottery in the north coast (north of the Jequetepeque valley) differed from that in the south (south of the Chicama valley). This led to the assumption that political systems were different in all regions and that there was no political unity or state. Moreover, Moche society was not distinguished in four social strata and the large buildings – often temples – did not contain large scale storage facilities, which are demands that a state required. Furthermore, there was also a lack of administrative complexes, military quarters and specialized handicraft sectors, which we do see in the last period of the Moche and the subsequent Chimu period (Bawden 1995, 263; Quilter 2010, 233).

Instead of a centralized political system, Jeffrey Quilter proposed that the Moche were connected by a similar religious system (Quilter 2010, 225). Most remains that have been found, seemed to have had a ceremonial function and might have acted as pilgrim places. Donnan agrees to this proposal as well and maintains that the religious system had been constant over a long period of time and was spread over a large geographic area (Donnan in Quilter 2010, 230).

Besides art and archaeology, researchers make use of ethnohistoric sources of Chimu legends. These people succeeded the Moche and adopted many aspects from their mythology and religion. These continuities might have been so strong that some rites still exist in modern shamanism, while parts of their legends might have been recorded by the Spaniards when they arrived in this region (Quilter 1990, 44).

Furthermore, iconography is an important part of the study of Moche culture. Because of the great importance of iconography in this study, I will extensively discuss the different iconographic approaches and advances in chapter 7 as an introduction to the iconographical analysis that will follow. In the next section several important aspects of the iconography of the Moche will be outlined, to get more insight in what the drawings look like in general.

## 5. Iconography of the Moche

The Moche are famed for their artistic abilities. Museums all over the world exhibit objects that were created hundreds of years ago. Even though different materials are represented, their pottery is abundant and shows a rich iconography.
Since the Moche lack a writing system, the naturalistic depictions on the pottery are a valuable source of information. The pottery can be divided in five chronological phases, based on the spout forms of stirrup spout bottles (Donnan 1976, 52).
The pottery can also be assigned to these phases on the basis of their drawings.
In all phases red and white slip were used to create the drawings. From phase III on, these drawings were fine line drawings. The figures were large, the lines were thick and large areas were depicted in the same colour. In phase IV the images were drawn with thin lines, which resulted in more figures in the same place and in more details. Besides, one made frequent use of silhouettes and open spaces. In phase V extreme thin lines were present, resulting in more complex drawings. Silhouettes and filled spaces were scarce. The figures in this phase were outlined and the background was often filled, for example with dots (Donnan 1976, 54).

The content of the paintings was varied. Activities like hunting, fishing, battle, punishment, sexual deeds and ceremonies were depicted in various ways. Different groups of figures were known in iconography: men, women, anthropomorphic beings, animals, objects and plants. It is this last category that will be explored extensively in the next sections.

## 6. Ethnobotanical research in the Peruvian *costa*

Plants are an important information source in archaeology. Information is gained from them in two ways (Yacovleff and Herrera 1934, 8):
1) by physical remains found in graves, as food gifts or as other offers.
2) by iconographic representations on objects.
Both strategies have several disadvantages: the identification of the physical remains is hindered by the poor preservation and the absence of materials to compare. The risks of the use of iconography are the imperfections that the painter could have left behind and the high frequency of images that are stylized.

Throughout the last century, much research was conducted concerning the Peruvian flora, but the focus in these studies was on the tropical Amazon. In 1920 the first floristic studies were carried out in the mountain forests and highlands, followed by decades in which no research was carried out. Until 1990 the vegetation structure, ecology and ethnobotany were hardly ever examined in the north coast of Peru (Bussmann and Sharon 2006, 2).

Plant data are also used to study the relationship between man and the plant world, in which case the degree of his cultural development does not matter. This scientific field is called ethnobotany (Bussmann and Sharon 2006, 2).
In the last few centuries different researchers have contributed to the acquirement of ethnobotanical data. In 1934 Yacovleff and Herrera documented hundreds of plants from all over Peru and discussed their roles in human society, based on archaeological, botanical and historical evidence. (Yacovleff and Herrera 1934).

This work was the basis that was elaborated by other investigators. In 1961 Margaret Towle wrote a book in which more than 2000 specimens are described, which come from different archaeological sites. Between 1982 and 1986 Donald Ugent identified and analysed different remains from tubers and roots from various archaeological sites on the coast. In 1992 Daniel Sandweiss discussed the role of plants in an Inca village with labour specialization and a year later Helaine Silvermann made an analysis of plant remains in Cahuachi and classified them according to the utility they had or might have had (Roque, Cano and Cook 2003, 33).

However, the research of plants that are depicted in iconography has been limited. In early times Larco Hoyle himself identified some plants that were depicted in Moche iconography in his *Los Mochicas*, but except for the identification no attention is paid to

other aspects (Larco Hoyle, 1938). Some attempts were made to analyse certain plants that occurred in iconography, for example the *Anadenanthera colubrina* in Wari iconography (Knobloch 2000); the *bromeliads* in Moche iconography (Rauh and Bismarck 1996); and domestic plants, the O*puntia*, the *Lobivia* and the *Trichocereus pachanoi* in Nazca Iconography (Proulx 2009).

An analysis of the plants that are common in Moche iconography is not available. Some researchers, however, did make comments about the presence of plants in fineline paintings. De Bock suggested that plants, small objects and small animals had a specific iconographic function, whereby they organized warriors into different groups (De Bock 2005, 63). He believes that complex warrior scenes are composed of small groups of warriors that distinguish themselves according to their weaponry, headgear and clothes. Plants are used to emphasize the separation of these groups.
Donnan argues that plants point to the location in which an activity took place, for example in farming lands or in the wilderness (Donnan in Verano 2001, 112-3).
Some plants are endemic, which means that organisms live in a bounded geographical area. The simplest examples are islands in the oceans, isolated mountain tops, lakes and river systems, but this phenomenon is also present on a much smaller scale. Factors of influence are for example humidity, soil circumstances, elevation and presence of sunlight (van der Werff and Consiglio 2004, 1699). In this way plants refer to a specific geographical area in which a scene takes place and that would be recognized by the Moche immediately.
Furthermore, according to Bourget the plants could have also had a symbolic function. Some plants are naturally shaped like a penis or are shown with visible roots, which could both be fertility symbols (Bourget 1994, 95).

The above suggestions were passing remarks in studies about other aspects and themes in Moche iconography. These “hypotheses” often consisted of one or two sentences and were not described in detail.
The purpose of this study is to get more insight in the role of plants in iconography to fill this gap.

## 7. A wealth of iconographic approaches

Iconography is an academic discipline that examines the relationship between images and it referents. These can be legends, myths, events, people, things or abstract concepts that are studied by folklore or history. The central idea is that two domains should be studied, instead of something free-standing (Knight 2012, 3).

The discipline can be divided in two approaches: the discipline of art historians and that of anthropologists. The first group analyses the images themselves, while anthropologists use ethnographical and ethnological data to put the referents in a social and cultural context (Knight 2012, xii-xiii).
In the 1960s and 1970s anthropologists considered the pre-Columbian materials as a sign of social-political relationships, but furthermore they paid little attention to them. The art-historians did pay attention to these materials: they described the style, iconography and aesthetics of these cultures. However, the pre-Columbian art history stayed a narrow field since these art-historians had turned away from the mainstream archaeology and they risked to be considered non-theoretical and irrelevant. For that reason Cecelia Klein advised to focus on the similarities between both disciplines, instead of focusing on the differences (idem).

The first researcher who operated in the field of Moche iconography was Rafael Larco Hoyle. In 1938 he identified some plants and animals that were depicted in iconography. These identifications were later confirmed by bone and plant material that was found in the north coast of Peru. Furthermore he supposed that there was a strong continuity of cultural, biological and environmental aspects (Shimada in Sharp 2008, 59).
In 1958 George Kubler indeed noticed that there definitely was a cultural continuity, but he stressed the fact that this does not mean that elements have not had different referents over time. To illustrate this, he shows that pagan themes from Roman and Greek times were used by medieval Christians, although they created new referents for the same images (Kubler 1958 in Sharp 2008, 61).

Gerdt Kutscher was also an influential archaeologist. He believed that Moche vessels could be considered as anthropological specimens that are important for the study of the Moche ideology. These specimens are important for the understanding of social meanings and also provide insight in the Moche everyday activities. The depicted cultural, social and natural scenes were integrated both in everyday life and in the

mythological world. For this reason, this material is very suitable for reconstructing this culture (Kutscher 1967a in Sharp 2008, 65).

Another famous Western art historian is Erwin Panofsky. The structural/contextual methodology that he established in 1982 to analyse iconography consisted of three parts: a pre-iconographic description, an iconographic comparison and an iconological interpretation of the social referents (Panofsky 1982 in Sharp 2008, 62).

It was this work that Anne Marie Hocquenghem based her structuralist/ethnographic approach upon in 1987. This approach used a combination of iconological methods and ethnographic data to understand Moche art (Hocquenghem in Sharp 2008, 63). Besides using the sources of Spanish chroniclers Hocquenghem also tried to project calendars from later times on the Moche society.
Just like Christopher Donnan and Yuri Berezkin she believes that the iconographic scenes are no individual stories, but form part of a sequence of stories.

According to Berezkin, the social structure of the Moche is visible in the way in which individuals are depicted. Supernatural beings are shown in diverse functional settings, which gives insight in the social structure of the Moche. He believes that stories change over time and that these changes can be found by analysing the iconographic content that shows information about the changing role of the Moche deities (Berezkin in Sharp 2008, 63).

Donnan supposed that Moche art is a symbolic system that follows certain rules of expression. It could be seen as a visual grammar system, that was understood by the members of the society. Artists could give information of social classes and status of personages and careful study leads to the identification of individuals, based on their physical appearance, distinctive clothes and objects associated with them (Donnan 1976, 158).
According to Donnan, Moche iconography consists of a restricted amount of themes. Every theme comprises aspects that occur in varied combinations. Investigating these themes is the base of his thematic approach. Donnan tries to visualise this by making an analogy with Christian art, while focusing on the Nativity theme (idem). By studying lots of material concerning this theme, diverse elements are discovered, for example a child, Joseph, Mary, the wise men, a star, a manger and many more. Not all of these elements are needed to communicate a message: they are all referents of the same story, regardless of the combination they occur in. This should be kept in mind when analysing

iconography, since elements that are connected with the supernatural, with the seasons or with ceremonial importance could easily be oversimplified (Sharp 2008, 67).

Donnan applies this approach to Moche pots and other media to distinguish different elements in drawings and to describe them. He takes several materials into account and finally compares all the elements. Based on the frequency in which elements occur, he makes a division between major and minor personages. By taking similar scenes from different objects, Donnan tries to complete the story. In addition to these archaeological materials Donnan also uses ethnohistoric and ethnographic data, believing that many habits and religious practices have remained the same throughout the past 1300 years (Donnan in Quilter 1997, 114).

Jeffrey Quilter encountered some problems with Donnan's thematic approach. He pointed out that there are no guidelines that describe when something is a theme and that researchers could already call something a theme when it occurs more than once. Another problem is the absence of a relationship between the different themes: they remain static entities with little explanatory power (Quilter 1997, 114).
Quilter elaborated the thematic approach of Donnan and introduced the narrative approach. He emphasized that the iconography depicts stories that describe the activities of gods and mortals, thereby explaining the origin of the world and determining desired human behaviour. Rituals repeat key events that occurred in those myths, as we also see during the celebration of the Last Supper in the Christian church (Quilter 1997, 116).
Quilter assumed that all themes described by Donnan are part of one story. To connect the different themes, he analyses the drawings by numbering various figures. For the identification he uses ethnographic and ethnohistoric sources. He follows Donnan in his opinion that myths form the basis of the Moche iconography and that there exists a continuity between the myths of the Moche and those that are written down in the pre-Columbian period (Quilter 1997, 121). Quilter goes even further and tries to place them in a broader perspective by comparing them to other religions. In his study he cites Clifford Geertz, who has written about subjects that can be observed in all religions, like the establishment of order, which resulted in the renewed relationship between men and the supernatural (Quilter 1997, 13).
There are some difficulties with this approach, besides the classic discussion of the applicability of ethnographic and ethnohistorical data. The story parts are different in length and it is not impossible that there are more stories from which scenes are depicted. Furthermore, the characters are depicted in different (regional) styles and

perform different actions, which makes it hard to conclude whether two characters are actually the same (Quilter 1997, 113).

## 8. Castillo's method of conducting iconographic analyses

The advantages of the Thematic and Narrative approaches for understanding Moche iconography are clear. I believe it is important to consider the painted scenes as a part of one or more large stories. Throughout the last decennia all abovementioned researchers have already distinguished several recurring themes and I will use these in the analysis of the plants.

Although the approaches of Quilter and Donnan are useful to unravel the meaning of the complete scene, they are less suitable for studying single components of the scene, like I will do. Therefore I will make use of Luis Jaime Castillo's method for conducting iconographic analyses. In his book "Personajes míticos, escenas y narraciones en la iconografía mochica" Castillo studies the personages that appear in Moche iconography. His methodology takes the work of Panofsky as a starting point, completed by the efforts of the above mentioned researchers Berezkin, Donnan and Hocquenghem.

Castillo distinguishes three stages in his analysis: a pre-iconographic stage, an iconographic stage and a discussion of the derived results (Castillo 1989, 25-6).
In the first stage, the iconographic content is insignificant. In Castillo's work, the realization of the corpus is explained and attention is paid to the personages that are already known in the literature. He describes the characteristics used to describe the personages in the second stage as well (Castillo 1989, 44) .
In the second stage, the personages are described. This description focuses on physical aspects, such as headgears, ornaments, facial features, clothing, body paint, weaponry and other objects that are held (idem).
The last stage is a concluding chapter in which the personages are compared. In this stage, the oddities and problems that were found in the previous stage are discussed. Furthermore, the various actions in which the persons are involved will be examined and mutual relations are studied to find proof for social hierarchies.

I believe that this method can be valuable for the study of plants in iconography as well. The analysis that will be carried out in the next paragraph, will therefore comprise the same three stages. In the first pre-iconographic stage, the corpus will be described. The plants will be divided in five groups, which will make the next stage of the analysis more accessible. Since the medium itself is of importance in this pre-iconographic analysis, I will take the pot itself and its context into account. I will describe how the production of

pottery was organized and how the pottery was distributed, for I believe this basic knowledge is required before one can say anything about the role of specific elements within its iconography.
In the second stage, the plants that occur in the iconography will be identified. A general description will follow, accompanied by their uses that are known from archaeological, ethnographical and ethnohistorical evidence. These uses are not absolute, but give insight in the ways in which the plants could have been used.
After that, a purely iconographic analysis will follow. Questions that will be answered are: In how many drawings does this plant occur? How many times is it depicted in total? In what kind of scenes does it occur? With what animals might the plant be associated? Is there a pattern with regard to the amount of flowers or leaves of this plant or with regard to the amount of plants that is depicted in one painting? Is this plant depicted with or without spikes or roots? Is this plant usually put in the ground or does it float around? In what direction is the plant depicted (diagonal, horizontal, upside down etc). What is the location of the plant?

In the third stage the results of the individual plant types (derived from stage II) will be compared. Striking details will be discussed, as well as the hypotheses posed by De Bock, Donnan, Hocquenghem and Bourget, in order to decide to what extent they fit the data.

## 9. Analysis

### 9.1. Stage I: pre-iconographic analysis

#### 9.1.1. The corpus

As a base for this analysis a corpus was selected, consisting of 95 roll out drawings. The majority of these drawings come from the book “Moche fineline painting: its evolution and its artists”, written by Donnan and McLelland. This work gives an overview of the development of the painting tradition of the Moche, from its very beginning to the end. The work is based on 2400 vessels from private collections and museums all over the world. For this research 86 of the drawings are incorporated, all depicting trees, plants and flowers. I created the other 9 drawings myself with material from the Wereldmuseum in Rotterdam and the Volkenkunde museum in Leiden. All of these drawings can be found in Appendix I (my own roll out drawings) and Appendix II (the roll out drawings of Donnan and McLelland).

Creating roll out drawings was a useful experience. The advantage of using roll out drawings is clear, since it is a good way to look at the whole painting at once, without turning the pot around or comparing different overlapping photographs.
While making the drawings, no details escape the drawer’s attention and I considered it very special that I was copying a drawing that was made more than hundred years ago.
I believe that knowledge of how to create roll out drawings can be useful for every research concerning painted pottery from whatever region. Therefore, I have included a description of how to make roll out drawings in Appendix I, in case others understand the value of this skill and would like to apply it to their own field.

For the analysis in stage II I only selected those types of plants that were depicted three times or more. Due to a lack of space I excluded the flowers alone and the trees, and focused on the plants. According to their shapes I have distinguished five types of plants, among which a bromeliad type and four cactus types.
Another type of plant, the *Portulacaceae*, also occurs a few times, but this type of plant was restricted to one type of scene, namely the hunting of deer. This plant is not included in the analysis.

From the 95 roll out drawings, 67 contained plants that could be ascribed to one of the five types. Among the excluded paintings was one painting that was too small to see

details and another was duplicated, since I had made a drawing of a pot that was already added to the corpus.

### 9.1.2. Production

in order to discover the message that is painted on the pots, it can be useful to study the context in which they are created and distributed. Questions that might arise while thinking about these processes are as follows:
Which types of pottery were made? Were some types solely used by certain population groups? Were they all decorated? If not, in which contexts was the decorated pottery used? Did the artist himself determine what he depicted on the pots or did he work in commission of an elite? For which public was the message on the pots destined? How where they distributed?
There has been only little archaeological research into these themes. However, due to the contributions of a few researchers some of these questions can be answered carefully.

Pottery is created in workshops. These are determined according to certain features, e.g. ovens, raw materials, tools, waste, molds, unfinished and broken objects.
Various factors are known for analyzing the organization of a production place. Hélène Bernier outlines four of them (Bernier 2009, 159):

- Intensity of production. According to the material found, one may estimate if a potter practiced his profession full or part time.
- Grade of production. The amount of objects determines the scale of production.
- Context of production. The context shows the affiliation between artisans and the ruling elite or the common people.
- The category of the goods produced.

Bernier distinguishes two types of specialists: elite-sponsored craft specialists and independent specialists (Bernier 2010, 23). The first group produces pottery in commission of a small amount of people, who control their production. These are often materials with a political or ideological message. The second group produces ceramics for the common people. They make domestic pottery, which can be used by all inhabitants.
Bernier illustrates this distinction by means of two potter producing sites in the Moche capital. The elite-sponsored workshop is found around monumental buildings. This is

important, since they had to control the production. The workshop of domestic pottery however, was located further away from the urban center (Bernier 2009, 169).

#### 9.1.2.1. Elite sponsored workshops

In the eastern part of the urban sector in the Moche valley, an elite sponsored workshop is found. All manufacturing steps are carried out at the same location and they are made of the same local clay source (Bernier 2009, 162).
Fine ceramics are made in a variety of shapes. They are smaller and more delicate than the domestic wares found in the other workshop. The most common types are jars, bottles, vases, bowls and pots, which show a high artistic and technical quality. The decoration is geometric as well as figurative, depicting human beings, plants, objects and supernatural creatures, forming complex narrative sequences (Bernier 2010, 165). The iconography was clearly used to spread political and religious messages, which indicates that the potters were instructed by the ruling elite.
Furthermore, musical instruments, molded figurines and portrait vessels are also very common and are not found in the other type of workshop.

#### 9.1.2.2. Domestic workshops.

Another workshop is recorded by Max Uhle in the twentieth century. The site is located in the vicinity of Cerro Blanco, which is further away from the urban sector of the Moche valley. An excavation never took place, but thousands of fragments of domestic vessels, raw material, failed pieces and grindstones are visible on the surface (Bernier 2009, 162).

Utilitarian vessels have a less thick wall than the specialized pottery. They can be divided into three groups, according to their size and morphological features (Bernier 2009, 1964).

1) Small vessels. These are easy to move and are suitable for cooking.
2) Pitchers. These are larger vessels with thin walls, which can be lifted and handed easily. These are used to cook, transport and store food.
3) Jars. These are very large vessels with a thick wall. These are used to store liquids (mainly water and *chicha*). It is hard to move them and they are often found along the walls of houses.

There was a great demand for these wares, for they had a short life time, since they were often on the fire. They are not found in graves or inside monumental structures.

Also, the last category is so hard to move that it is probable they were only used by the local population.

#### 9.1.2.3 Organization

It is unclear how the different potters were organized. Almost no workshops are excavated, which makes it hard to draw conclusions. However, what we do know is that some pottery pieces are marked. Christopher Donnan and Michael Moseley both suggest that these marks could represent different potters who shared an oven or working space, so that they could distinguish the pots after the process (Donnan 1971, 465; Moseley 1975, 192). Still, a great amount of the pottery is not marked, because of which it stays very dubious and more evidence is needed to get more insight.
Besides, the use of the same molds by different potters and painters for at least portrait vessels could indicate the sharing of molds or even workshops, as is examined by Donnan (Donnan unknown, 64). Multiple potters and painters worked together, making use of the same molds. However, it is important to note that portrait vessels were only made in elite sponsored workshops, so this kind of cooperation not necessarily existed in the domestic workshops.

More evidence is needed to see if Bernier's distinction between the different workshop types is also applicable to other valleys. In the Chicama valley a workshop for fine ceramics is found, at the site of Cerro Mayal. This workshop consists of three components: the places where raw clay is worked, molded and painted, a cooking zone and an area with storage facilities in small adobe structures. In this workshop there is only evidence for elite sponsored materials (Russel and Jackson 2001 in Bernier 2009, 162).
In the periphery of Gallindo a small workshop has been found, where domestic wares were produced. Garth Bawden points out that there was also another workshop, in which stirrup spout bottles, *floreros*, trumpets and figurines were made in a larger workshop, under supervision of the administrative elite (Bawden 1996 in Vaughn 2006, 330).
However, Claude Chapdelaine questions this strong contrast between fine pottery and domestic pottery in the Santa valley. In 2009 only six workshops were excavated (in all valleys) (Chapdelaine et al 2009, 50), which implies that it is important to be very careful when drawing conclusions. He suggests the organization of the rural areas may have been organized differently compared to the more urban areas.

The data do not provide evidence for strong state control on the production of pottery, but indicate a diversity of production centers in the Santa valley. Guadalupito turned out to be a center of political and economic development, with strong political and ideological ties to the Moche capital (Chapdelaine et al 2009, 56).

The information is still very limited and more research needs to be done. A division between elite-sponsored and independent workshops seems probable, at least in the urban areas. According to neutron activation analysis of sherds from the Moche capital (Chapdelaine 1995 in Vaughn 2006, 331), we might state that everything is locally produced. However, the molded fineware ceramics are much more homogeneous, which again shows their affinity with the elite, since the potters had not much freedom. The domestic wares are much more heterogeneous. The analysis proves that they were made by various potters, who created the pots according to their own preferences.

It seems likely that things were organized differently in the rural areas, where they were less self-sufficient and may have maintained close contacts with neighboring villages.

#### 9.1.2.4. Distribution

Different mechanisms could be the basis for the distribution of pottery. Since the evidence of large markets is scarce in the Andes, it is likely people laid their hands on pottery in other ways.
According to Moseley, it is unlikely that all products were gathered, stored and distributed under strict control of the elite. No large scale storage facilities have been found that could support such projects (Moseley 1975, 33).
Ethnographic research indicates that it is improbable that every village had its own pottery workshop. Ramón and Bell carried out large scale research in different regions and their results suggest that only a few of the villages they investigated produced pottery. For example, in the Piura region only 4 out of the 60 villages fabricated their own pottery (Ramón and Bell 2013, 602). Nevertheless, every village had pottery at their disposal, which means that there was circulation between the villages which produced pottery and the ones which did not.
Thus far, no data are available that could explain the mechanisms behind this circulation, which means that we still rely on ethnographic data. Nevertheless, Donnan (1971) describes potters who traveled from village to village in order to take down orders. The pots are produced locally and exchanged with the population. Ramón (2011) also explains the concepts of swallows: rural potters that leave their homes to produce pottery in other villages. Based on ethnographic and historical evidence he outlines six

different cases in which people move seasonally to other communities to produce and sell their wares. Such mechanisms could have existed in the Moche society as well, but stronger evidence needs to be found.

The discovery of fine ‘elite supported’ pottery in the valleys of Chicama and Santa suggests every valley produced its own pottery. Rafael Larco Hoyle noted that portraits of the same individual could be found at different sites in the same valley or in different valleys. He believed that all portraits of an individual may have been produced in the same workshop after which it was distributed (Donnan, date unknown, 64).
The discovery of fine ‘elite supported’ pottery in the valleys of Chicama and Santa suggests every valley produced its own pottery. Rafael Larco Hoyle noted that portraits of the same individual could be found at different sites in the same valley or in different valleys. He believed that all portraits of an individual may have been produced in the same workshop after which it was distributed (Donnan, date unknown, 64).
However, discretion needs to be offered when using the term *portrait vessels*. Janusz Woloszyn (2005, 221) notices that facial traits do not have to refer to the same person, but can also symbolize a specific population group. Whereas Donnan considers portraits showing the same scars as a proof of being the same person but depicted in different phases of his life, Woloszyn believes that these scars could have a ritual origin, being a sign of a specific population group.
If these vessels are still portraits, they could have been spread to other powerful people, in order to demonstrate relationships. This could also be said for other important messages that the capital in the Moche valley wanted to spread to other valleys.

Nevertheless, the products from the elite-supported workshops were available to everyone, since every household had decorated pottery (Bernier 2009, 170). This is of course understandable, since ideological and political messages were spread that were also meant for normal citizens. It is important to note that these kinds of objects were manufactured under the control of the elite, but these objects were not only meant for the members of that social class.

How is this information relevant for this thesis? First of all, one should realize that all pots within the corpus are decorated. According to Bernier, they are therefore made in an elite sponsored workshop. The message that the iconography communicated is determined by these prominent people and was intended for every inhabitant, since Bernier also confirmed that every house possessed decorated pottery. Whatever the role of plants in iconography might have been, it was at least known by the members of

Moche society, just like all other aspects of the scenes.
Unfortunately, I do not know the provenience data of these pots, which means that no statements can be made about whether certain valleys depicted specific plant types or not.

With regard to the pottery types that are of importance in this study, it can be said that almost all of the pots are stirrup spout bottles. Already since 1500 B.C., more than a millennium before the Moche appeared, these bottles were produced in the north coast of Peru. It is still an issue of debate why these pots were so important and how they were actually used (Donnan 2014, 13).

### 9.2. Stage II: Iconographic analysis

In the second stage of the analysis the roll out drawings will be examined. First the plants will be identified and a general description will be given. Then the uses of the plants will be explored, giving a rough idea of the way in which the plants could have been useful to the Moche society. At last different iconographic aspects will be outlined, such as the amount of plants, the scenes in which they occur, the animals that accompany them, the presence of roots and spikes and their location within a roll out drawing.

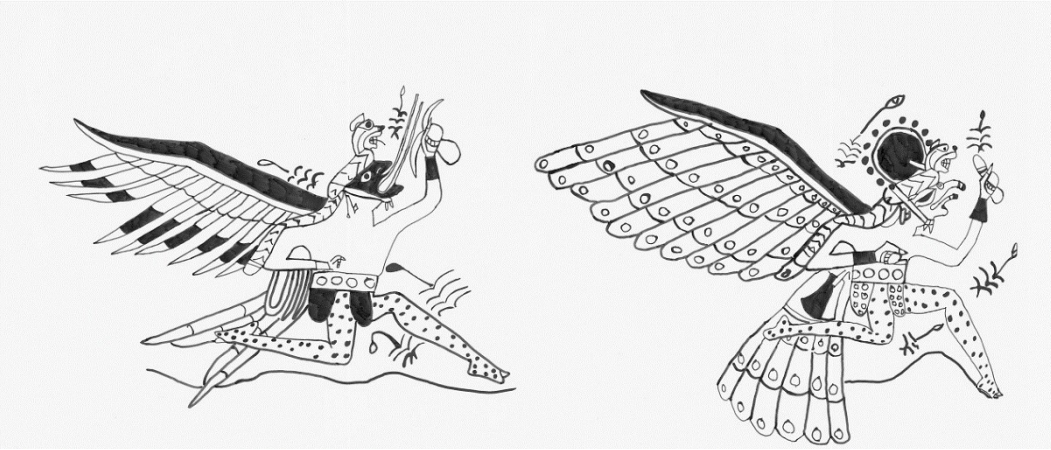


*Figure 3: Self-made drawing of two anthropomorphic ritual runners and tillandsia's.*

#### 9.2.1. Group 1: Bromeliad type

#### 9.2.1.1. Identification

The first group of plants is shown in figure 3. V-shaped leaves are placed above each other and the different leaves often do not touch each other. One or two stems raise from the centre of the upper leaf, resulting in a bud that seems to hang to the left or to the right. However, buds that stand upright are common as well.
Larco Hoyle (1938, 50) has identified this type of plant as a tillandsia, a genus in the family Bromeliaceae (see figure 4 and 5).

*Figure 4: A tillandsia with two buds. (http://tillandsias.gardenwebs.net/Tillandsia.cyanea.jpg)*

#### 9.2.1.2. General description

Currently there are 250 known types of tillandsias, which makes it the largest genus of the Bromeliaceae. These plants are also known as 'air plants'. They mainly occur in Latin America and are found in different habitats: in the desert along the coast, the ice border of the Andes, the cloud forests and the tropical rainforests (Rauh and von Bismarck 1996, 7). They grow on trees, rocks, cliffs and some types of cacti (Sim Eng Hiang, 2014, introduction).

*Figure 5: A tillandsia with one bud. (http://www.ecoterrazas.com/246-304-thickbox/tillandsia-cyanea.jpg)*

Tillandsias are epiphytes, meaning they are organisms that live on plants and tree barks without extracting food from them, which is in contrast to parasites. They acquire their nourishment and water not by roots, but by scales on their leaves (idem). An extraordinary feature of this plant is that its flowers are turned to the wind, so that they can catch the moisture in the air (De Bock 2005, 74).
Although there are many species of Tillandsias, only few species can be found in the desert, i.e. the *Tillandsia purpurea* and the *Tillandsia latifolia* are omnipresent. Although they are not as omnipresent as the abovementioned species, the *Tillandsia recurvata*, *Tillandsia paleacea* and *Tillandsia capillaris* are encountered here as well (Rauh and von Bismarck 1996, 24).
Most tillandsias appear on an altitude of 300 to 600 meters. Together with cactus they grow on an altitude of 700 to 900 meters (De Bock 2005, 74). The *Tillandsia purpurea* is, however, known to occupy a large area, up to 3000 meters high (Rauh and von Bismarck 1996, 24).

### 9.2.1.3. Uses of the plants

Archaeological investigations have shown that the stems of certain species were used to fill the heads in mummy bundles. They were also used to create the pillows on which the mummy bundles were seated. Such a pillow was for example found in an ancient grave at Ancón (Towle 1961, 31), a fishing community 42 kilometres north of Lima where traces of Chavin and Chancay occupation can be found (Kaulicke 1997, 2 and 5).
The plants also might have had a medicinal function, since one of the species, the *Tillandsia xiphoides* has flowers which are nowadays locally used in medicines for respiratory diseases (Encyclopaedia Brittanica, inc 2015). The leaves and stem of the *Tillandsia cacticola* were also mixed with other ingredients to create a medicine against fright, heart problems, gases, nerves, anxiety and heavy air. Taking this cure was also assumed to result in good luck, good business and good health (Busmann and Sharon 2006, additional file 1).
The *Tillandsia multiflora* had some medicinal functions as well: the plant was used as a remedy for depression and heart- and nerve problems (idem).

### 9.2.1.4. Iconography

The tillandsias are depicted in 37 roll out drawings. In total they occur 330 times. They have one flower in 79,8% of the cases, two flowers in 18,1% of the cases and in 2,1% of the cases they do not have a flower at all.

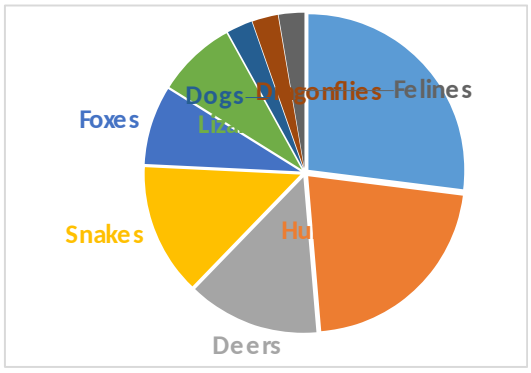
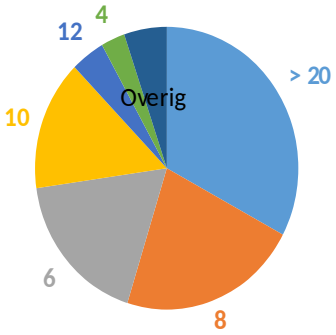



*Figure 6: Circle diagram showing the presence of roots in roll out drawings depicting tillandsia's.*

54% of the drawings depict animals. Figure 6 shows the kind and the frequency of animals that are depicted in the drawings: half of the depicted animals is a (humming)bird. The presence of the hummingbirds could correlate to the fact that 13,5% of the drawings depicts a combat scene, in which these birds have an important symbolic function, since they are believed to suck the life spirit out of combatants (Franco and Vilela 2003, 412).
The most scenes in which the tillandsias occur are ritual runner scenes. No less than 64,9% of the drawings depict this activity.

The ritual runners are called "*chasqui*" and they were messengers that transported Lima beans. These beans had a smooth surface, which could be incised or drawn upon to spread messages. The beans were transported and stored in small leather pouches, which were probably made from the tanned hide of llamas (Melka 2010, 95).
The *chasqui* are depicted in human and zoomorphic forms and they always have a pouch in their hand. According to Larco Hoyle (Larco Hoyle 1942 in Melka 2010, 112), they can be subdivided into four groups, on the basis of their headdresses: warrior messengers, religious messengers, civil messengers and governmental messengers. These could have been representatives for different social strata.
In iconography, foxes are depicted which read the beans. They are believed to be very intelligent and therefore they are symbols for the wise priests that actually fulfilled that role in Moche society (Gargurevich 2002, 64).
It is not very likely that the *chasqui* were really clothed in the way they are depicted. The shorts they wear are suited for far distances, but the headdresses, nose rings and ear discs are not. These are probably added to accentuate their high status (Melka 2010, 112).
Other scenes in which the tillandsias occur are scenes with warriors that are not in combat (10,8%), hunting scenes (8,1%) and a procession scene was depicted once (2,7%).




The amount of tillandsias in one drawing ranges from 1 to 33. Most common are rollout drawings showing 2 or 6 plants (13,9%), followed by the numbers 1, 4 or 7 (8,3%). However, a large part (19,2%) of the drawings depicted more than 15 plants. A considerable amount of plants correlated to a lot of leaves, while the plants contained less leaves if the amount of plants was low. In figure 7 an overview of the amount of leaves per plant is shown.

While interpreting the diagram it needs to be noted that the large amount of 20 or more leaves is coming from only five images that all depicted plenty of plants. Besides this amount the appearance of 6, 8 and 10 leaves is most common.

*Figure 7: A circle diagram showing the amount of leaves that the tillandsia's have.*

Another part of the analysis is an overview of the location and the direction in which the plants are depicted. The majority of the plants (93,4%) is depicted without a connection to the ground: they are floating around.
The most plants (54,5%) are depicted straight. 17,8% of the plants are positioned diagonally, with the flower above. A slightly smaller percentage of the tillandsias is drawn horizontally (14,7% ), while only a little part of the plants is depicted upside down (6,6%) or diagonally, with the flower below (6,3%).
Also attention was paid to the direction in which the flowers were hanging, but there was no pattern. Most flowers (39,4%) were depicted with the head upright and the percentages of flowers hanging to the left or to the right were very close (respectively 32,5% and 28,1%). Within one image it frequently occurred that the flower heads were depicted in more than one direction, so a representation of the direction of the wind (to which the plants turn their flowers to catch the moisture) cannot be present.

At last the location of the plants within the scene was described and the images which presented plants with roots were counted. In 75,7% of the roll out drawings the tillandsias were equipped with roots. The scenes in which they did not occur, were mainly deer hunting scenes. Other scenes in which the roots lacked were only a minority with respect to the ones that did depict roots.

Figure 8 shows the location of the plants. There are three large groups that can be distinguished and in all of them the depicted figures are central. The largest group of tillandsias is placed between the figures on the height of the waist. The second group of plants is also placed between two persons, but on the height of the head. Within the third group the ritual runners are fully surrounded by plants, as if the painters wanted to fill the background.

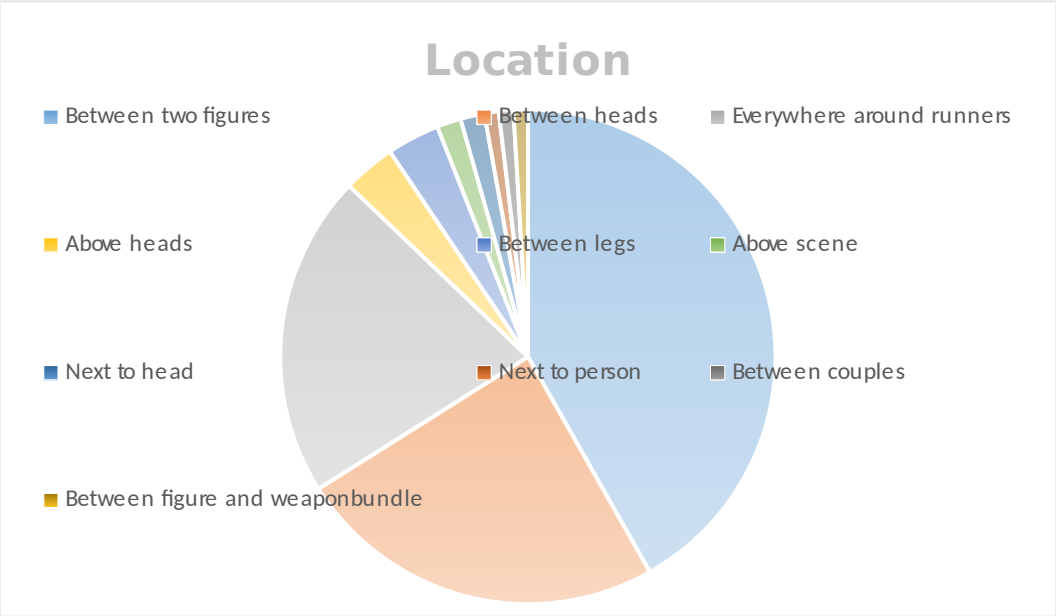



*Figure 8: A circle diagram showing the location of the tillandsia's.*

### 9.2.2. Group 2: Cactus type I

*Figure 9: Roll out drawing of warriors and cactus type I (Donnan and McClelland 1999, figure 3.49).*

#### 9.2.2.1. Identification

The second group of plants is shown in figure 9. This type of cactus is characterized by a stem and horizontal branches. It was hard to find a similar plant and even glancing through a four-volume thick cactus catalogue of more than 1000 pages and 2500 illustrations did not lead to an answer.

However, I could find a picture that corresponded with the plants depicted in the roll out drawings in the work of Anderson called 'The Cactus Family', published in 2001.

My assumption was confirmed when this plant, the *Browningia*, visible in figure 10, did appear in Bolivia, North Chili and Peru. The author had himself come across this specie around Trujillo, a region in which the Moche left their traces as well.

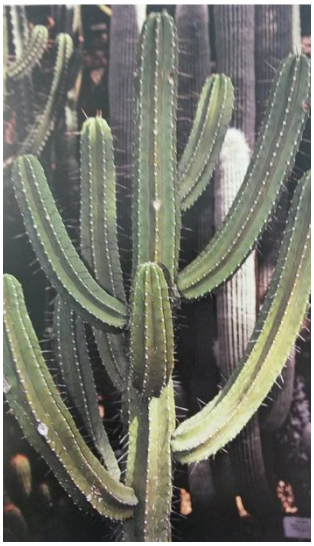


*Figure 10: Browningia (Anderson 2001, 134)*

#### 9.2.2.2. General description

The *Browningia* comprises eleven species and is found in Bolivia, Northern Chili and Peru. They are found from an elevation of 1500 metres and are omnipresent in the Atacama desert of Peru (Yetman 2007, 17). The *Browningia* is also typically found in the rock desert located in the western foothills of the Andes (Rauh and von Bismarck 1996, 23).

These plants have well-formed trunks with many branches. They can get up to 10 metres long. In the summer months (November – March) the cacti are adorned with flowers, ranging from a white to purple-red colour, that opens at night (Anderson 2001, 133).

#### 9.2.2.3. Uses of the plants

Due to the solid trunks the *Browningia* is valuable for construction material and firewood. The plants bring forth edible fruits as well (Yetman 2007, 240).

#### 9.2.2.4. Iconography

This type of cactus occurs in only 3 of the roll out drawings and in total they are depicted 7 times. This amount is way too small to drew conclusions from, but I still would like to share the outcome of my analysis. The scenes in which the plants appear are a battle scene, a deer hunting scene and a scene with seated animals. They are not depicted in combination with other plants, except for the deer hunting scene where the *Portulacaceae* is depicted, as is the case for most of these scenes.
Animals are depicted in 2 of the roll out drawings. Apart from 4 deer in the hunting scene, a snake; 2 deer and 2 felines, equipped with headgear, are also depicted once.

This type of cactus occurs 1, 2 or 4 times in the roll out drawings. The majority of the plants is depicted without spikes and roots, although they do have these characteristics in two of the cases (one of the plants has both).

None of the cacti is floating around: they are all located along the surface and almost all of them are drawn in a straight position. The only exception is one plant that is placed diagonally, but is still upright.
Concerning the location of the plants, the cacti can be divided into two groups: 57% of the cacti are placed between different figures and the other part (43%) separate couples that are interacting with each other.

### 9.2.3. Group 3: Cactus type II

*Figure 11: A self-made roll out drawing of warriors in combat and two cacti.*

#### 9.2.3.1. Identification

The second type of cactus is depicted in the scene above (figure 11). These cacti are characterized by different upright stems that originate from a central spot. In the iconography they are depicted in white and black.

There are different types of cacti that suit this description. Larco Hoyle identified this type as the *cereus* specie (Larco Hoyle 1938, 50), which is depicted in figure 12. These plants have strong stems and are common in the coast region of Peru (Towle 1961, 69).

*Figure 12: Cereus. (http://pics.davesgarden.com/pics/palmbob_1115406304_3.jpg)*

Another type of plants that looks like this type of cacti is the *Echinopsis*. The *Echinopisis pachanoi* (also known as *Trichocereus pachanoi*) and the *Echinopsis peruviana* (also known as *Trichocereus peruvianus)* are nowadays very famous due to their hallucinogenic power. For the common people they are better known under the names 'San Pedro cactus' and 'Peruvian Torch'.

According to Towle (1961, 71), these types of plants are often depicted in hunting and battle scenes.

#### 9.2.3.2. General description

##### 9.2.3.2.1. Cereus

There are 34 species of *Cereus* known (Anderson 2001, 142), the largest of which can get up to 16 metres high (Britton and Rose 1920, 11).

They have firm stems that mostly stand upright, although they are also sometimes spread. These plants typically have many branches and nocturnal flowers, which are often white, sometimes pink or purple and sporadically cream, yellow or green. The (often) edible fruits that these plants bring forth are mostly red and in a less degree yellow (Britton and Rose 1920, 1). The *cereus* is equipped with a waxy layer (glaucus or bluish in colour) to counteract evaporation (idem).

#### 9.2.3.2.2. Echinopsis

The *echinopsis* grows widespread in the highlands of Peru, Ecuador and Bolivia on an altitude of 2000 to 3000 metres (Pratt 2007, 417). The stems of this columnar cactus are usually five to six meters high. There are a lot of stems, which are somewhat spreading, equipped with many spines, often twelve in a cluster. These plants have nocturnal flowers that are white in colour (Towle 1961, 71). The plant is visible in figure 13.

*Figure 13: Echinopsis (http://upload.wikimedia.org/wikipedia/commons/6/62/Starr_070320-5799_Echinopsis_pachanoi.jpg)*

### 9.2.3.3. Uses of the plants

#### 9.2.3.3.1. Cereus

Nowadays the *Cereus* is used for different purposes. The fruits and stems are edible and the wood is used to create furniture or serves as fuel. Furthermore the plants are used as fences (Anderson, 2001, 69-70).

#### 9.2.3.3.2. Echinopsis

Some fruits of this genus are edible. One of these species, *Cuzcoensis*, also produces a substance with which the houses in Cuzco were whitened. These plants were also cultivated to create fences and the spikes were used as needles (Yacovleff and Herrera 1934, 73) .

The San Pedro (*Echinopsis pachanoi)* is a famous hallucinogenic plant, that has been depicted in iconography since 600 B.C, in which case it is held by shamans (Sharon and Donnan 1974, 54).

There are different types of plants, depending on the amount of ribs they have. Plants with seven ribs are the most common and therefore have the least potential, while plants with four ribs are rare and have more potential. The San Pedro with four ribs is even more powerful, because the indigenous people believe that every rib corresponds with a direction of the wind (Pratt 2007, 417).

The Peruvians called this plant *Huachuma* and it was often used during spiritual practices. The catholic Spaniards however prohibited the use of the plant, but the indigenous people kept using it secretly (idem).

In modern Moche witchcraft the plant is still used during séances, although it is influenced by Christianity (Gillin 1947, 140).

John Gillin describes how the San Pedro was used. The shaman and the patient drank the *Huachum* during a healing ritual which lasts a full night. The shaman reached a state in which he could enter the spiritual world in order to discover the diagnosis and the treatment of the patient. The magic of the plant does more than merely healing: the shaman is also able to take the identity of his patient. Therefore, it is necessary for the patient to drink the *Huacum*, so that he will open his heart. Furthermore, this person will blossom like the nocturnal flowers of the plant to reach a higher energy level, which results in spontaneous dances or writhing on the ground (Pratt 2007, 418).
In modern ceremonies San Pedro is not only used for the curing of diseases and disorders (under which inflammation, ulcers and acne) but also for divination and to counter spells that others have laid upon the patient. Furthermore the ceremonies can be a remedy for alcohol abuse or insanity and they bring luck (idem).

#### 9.2.3.4. Iconography

This type of cactus is depicted in 18 roll out drawings. In total the plant occurs 44 times, which corresponds to 9% of the plants that are incorporated in this analysis.
The amount of stems ranges between 1 and 5, although 2 (39%) and 3 (46%) stems are the most common.

In most cases (78%) animals are depicted, but these are restricted to three types. More than half of the depicted animals exists of birds, and deer (23%) and felines (12%) are also apparent.
These cacti often (39%) accompany dressed warriors or combats (11%). These are important themes in Moche iconography.
Ritual battles were held between different groups within Moche society, which resulted in the taking of captives. Those prisoners were offered during a ceremony and their blood was given to a high priest or priestess, a representative of the gods. This was more than an iconographic representation; archaeological excavations in the ceremonial centres of Huaca del Brujo and Huaca de la Luna stumbled upon bodies that showed injuries caused by beheading or blows with a club (Hocquenghem 2008, 39).
Quilter states that these rituals were carried out to ascertain the fertility of the earth, which was very important in this dry, desert-like region where water was scarce. By bringing these offerings to the gods, the Moche hoped that the gods were pleased and would give them fertile ground in return (Quilter 2011b, 84).

Cactus type II appears less often (each 11%) in the following scenes: with animals, a ceremony and ritual runners. Only once they are depicted in a procession.

No more than 8 of these plants are depicted in one roll out drawing. 1 to 4 times is the most common (17%), followed by 7 and 8 times (11%) and 5 or 6 times (6%).
The amount of cacti with and without spikes is quite similar: 58% of the plants has spikes. The same numbers are true for the presence of roots: 58% of the plants are equipped with roots, but this does not mean that the plants with spikes also have roots.

The majority of these cacti are depicted while they are floating around: this is the case for 70%. Most are painted in an upright position (63%), but other positions also occur: 17% is shown diagonally, but upright, 15% is shown horizontally and 5% is depicted upside down.

The diagram below (figure 14) shows the different locations in which the plants occur. 30% of the plants appear all around figures, as if the painter wanted to fill blank spaces. 15% of the plants was portrayed next to a figure, without another figure around and 11% appeared between two figures.

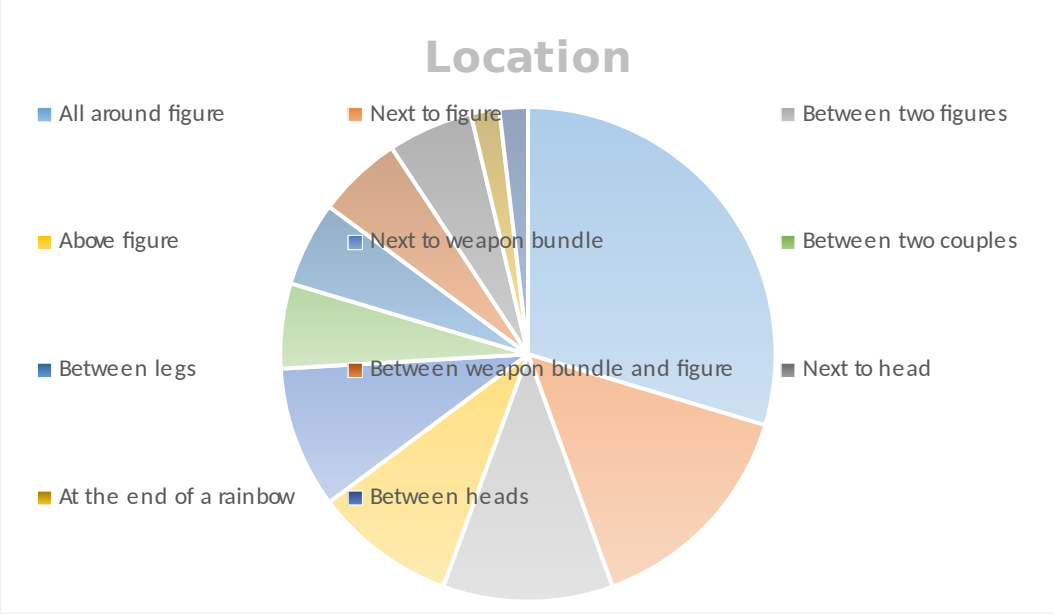



*Figure 14: Circle diagram showing the location of Cactus type II.*

### 9.2.4. Group 4: Cactus type III_

*Figure 15: Self-made drawing of warriors in combat and cactus type III plants.*

#### 9.2.4.1. Identification

The third type of cactus is visible on figure 15. This type of plants is characterized by a sphere or triangle on top. This extraordinary feature has similarities with the *melocactus* (figure 16). However, one should keep in mind that these types of cacti could also be representations of cactus type II, with an addition of the flower. The same plants were shown in four (out of sixteen) images, with and without the sphere.


*Figure 16: Melocactus. (http://www.arkive.org/melocactus/melocactus-ferreophilus/)*

If these spheres indeed represent flowers, they surely give an indication of the season in which an activity took place.

#### 9.2.4.2. General description

Of the *melocactus* 33 species are known. These plants have a round to cylindrical form and are usually less than 1 metre in height. They flourish during the day and their buds close at dusk. The flowers live short and are small and red to pink in colour. The fruits are white, pink, magenta or red. Pollinations happen by hummingbirds and in a less degree by insects (Anderson 2001, 457).

The depicted *melocactus*, which is a *ferreophilus*, is an endangered species that only lives in Brasil, on an elevation between 700 and 850 metres in an area that is less than 100 m2 (idem). It is unlikely this plant is depicted by the Moche and for the time being this type III plant will be considered as a flowering cacti, probably from the cactus type II category.

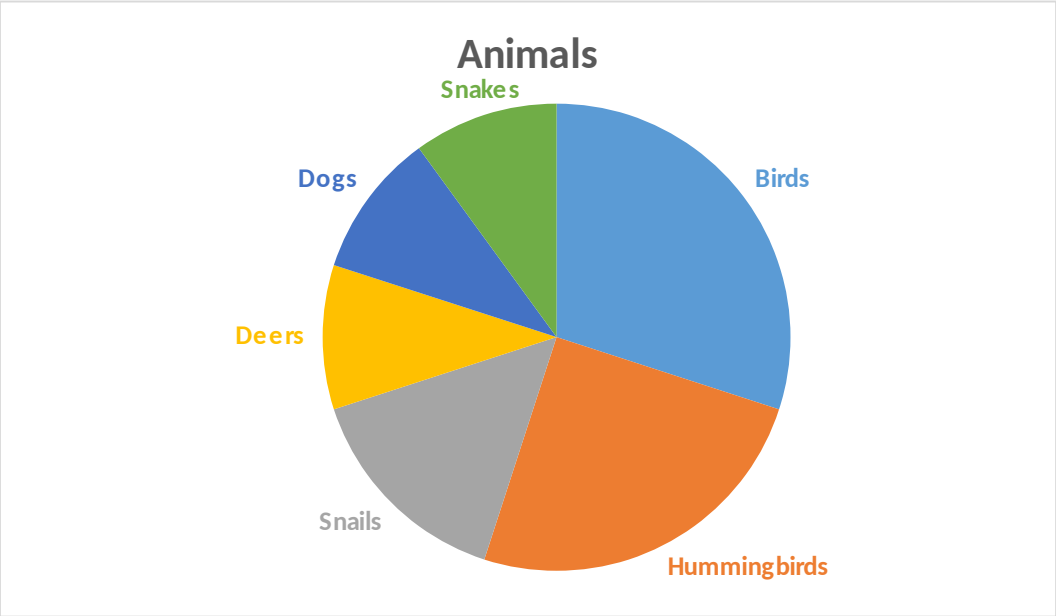



*Figure 17: A circle diagram showing the occurrence of animals in combination with cactus type III plants.*

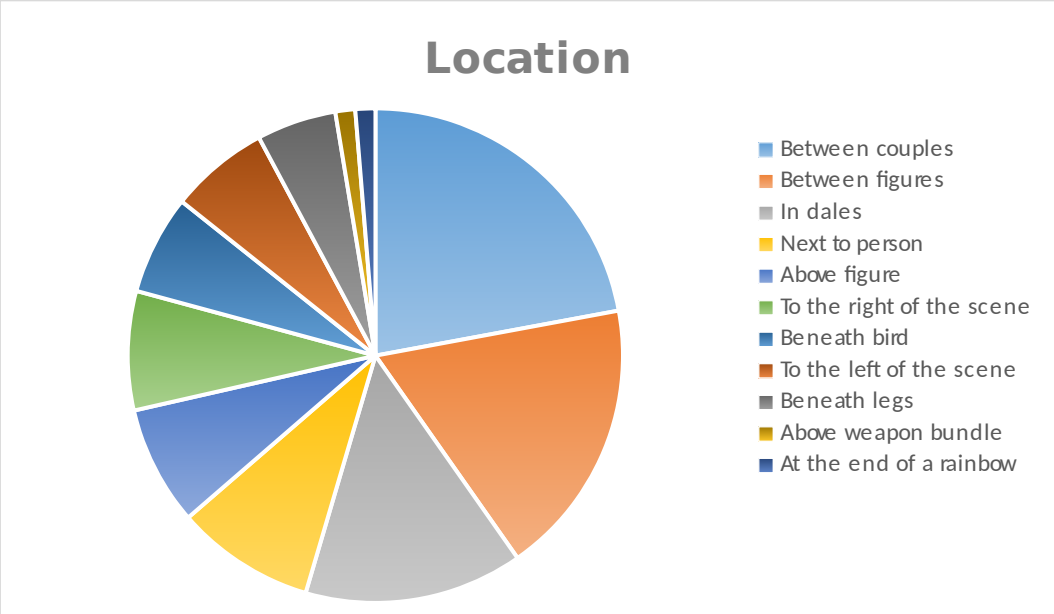
#### 9.2.4.3. Iconography

Cactus type III is depicted in 16 images, in which the plants occur 80 times. Most cacti (80%) have only 1 branch; a small amount of the plants has 2 or 3 branches.
Animals are common, as they occur in 81% of the roll out drawings. Figure 17 shows the frequency with which the animals appear. Apart from birds (which occur in combination with all previous plant types) snails, deer and dogs are represented.
These animals have a prominent place in hunting scenes, which is the most important activity in which these plants occur apart from the combat scene.
The hunters are always dressed as warriors and they use slings, darts and spear-throwers as weapons. Since deer are often depicted as bounded prisoners, Donnan believed they could be a symbol for human combat (Donnan 1997 in Bourget and Jones 2009, 223)
Besides battle and hunting scenes, these plants are also depicted in warrior scenes (19%) and a ritual runner (6%) and ceremonial scene (6%).

Cactus type III appears at the utmost 11 times in one roll out drawing. In most images (31%) the plants are depicted twice, followed by 11 times (19%), 1 and 4 times (13%) and 3, 6, 8 and 9 times (6%). There are no paintings with an amount of 5, 7 and 10 cactus type III plants.

The majority (94%) of this type of cacti is equipped with spikes and is depicted without roots (88%). Most cacti are depicted on the ground (66%) and in an upright position

(83%), although all other directions are present in small numbers, of which upside down is the most common (8%).




An overview of the locations in which the plants are placed is shown below (figure 18). The diagram shows that most cacti are placed between couples or figures. 14% of the plants are depicted in scenes with mountaintops and dales.

*Figure 18: A circle diagram showing the locations of cactus type III.*

### 9.2.5. Group 5: Cactus type IV

*Figure 19: roll out drawing of warriors and captives, showing cactus type IV plants (Donnan and McClelland 1999, figure 4.6).*

#### 9.2.5.1. Identification

The fourth type of cactus is depicted above (figure 19). The cacti are marked, because there are also tillandsias. Cactus type IV is characterized by the composition of different leaves, which seem to grow upon each other. Every cactus that has these elements, belongs to this category of plants.

This type of plants has clear similarities with the *Opuntia* (figure 20)

*Figure 20: Opuntia. (http://www.cactus-art.biz/schede/OPUNTIA/Opuntia_microdaysis/Opuntia_microdasys_albata/Opuntia_microdasys_albata_540.jpg)*

#### 9.2.5.2. General description

The *opuntia* is the largest genus of the *cactacae* and comprises approximately 200 species. These plants are characterized by glochidia, which are little bristles with hooks in the areoles (the small light or dark coloured bumps on the cactus out of which grow clusters of spikes).

These plants grow in a large area, stretching from western Canada to the south of South America. There are very small species, ranging from 2.5 to 5 centimetres, but there are also large treelike species that can get up to five metres long (Encyclopædia Britannica, Inc. 2012, Opuntia).

The *opuntias* occur in great amount in the northern parts of Peru, in some kind of 'shrub desert' that characterises the transition to the deciduous dry forest (Rauh and von Bismarck 1996, 23).

The *opuntia exaltata Berger* is a genus that occurs in the coast region of Peru on an elevation of 2500 to 3700 metres. They get up to 5 or 6 metres high and have a cylindrical stem that sporadically branches out. This plant is deciduous and the leaves, that are also cylindrical, grow near young branches that have a light green colour (Yacovleff and Herrera 1934, 73).

#### 9.2.5.3. Uses of the plants

*Opuntia* have served different goals. The *opuntia exaltata Berger* did not only offer edible fruits, but were also used as fences to separate areas and the spikes were used as pins or combs (Yacovleff and Herrera 1934, 73).

These plants were also used for medicinal purposes. The cooked stems of the *opuntia floccosa salm* were eaten to mitigate stomach problems (Yacovleff and Herrera 1934, 74). Nowadays the fruits of the *opuntia ficus indicia* are used by diabetes patients and the leaves are used to dispute hair loss (Busmann and Sharon 2006, additional file 1).

They are also used in the case of cough, prostate problems and nose bleedings (Anderson 2001, 51).
Moreover, the *opuntia ficus indicia* is famous for its role in the production of a red dye, that is derived from the body of a cochineal insect, that uses this plant as an host (Anderson 2001, 64-5).

#### 9.2.5.4. Iconography

The *opuntia* appears in 8 roll out drawings, in which the plant is depicted 28 times. The amount of leaves ranges between 1 and 15, although 6 (29%), 3 (17%) and 5 (13%) are the most common numbers of leaves in the drawings. Plants with 9 to 12 leaves do not occur in any of the drawings in this sample.
Animals are depicted in all roll out drawings, of which deer and hummingbirds are most common (each 23%), followed by birds (15%).
There is not a specific scene that can be assigned to this type of plants. There are four scenes that appear in an equal percentage: animals, combat, hunting and dressed warriors who do not participate in battle.

The amount of plants that is depicted in one painting ranges from 1 to 8, of which 2 plants are the most common (44%). In 22% of the cases only 1 plant is depicted, followed by a percentage of 11% in which 3, 4 or 8 plants are shown.
Almost all plants of this type (94%) are equipped with spikes, while the division between roots or no roots is stronger: a minority of the plants (32%) is shown with roots.
This low percentage cannot be related to the amount of plants that is placed on the ground (33%), because the majority is floating (which means that roots would be expected).
These types of plants are not placed in many different positions: 86% of the plants are depicted in a straight position, and 14% are depicted slightly squinted, in a diagonal position but still upright.
The diagram below (figure 21) shows the location of the plants. More than one fourth of the plants are placed between persons, while another quarter belong to plants that are placed between couples. The third group of plants also concentrates on persons, but are limited to only one person.

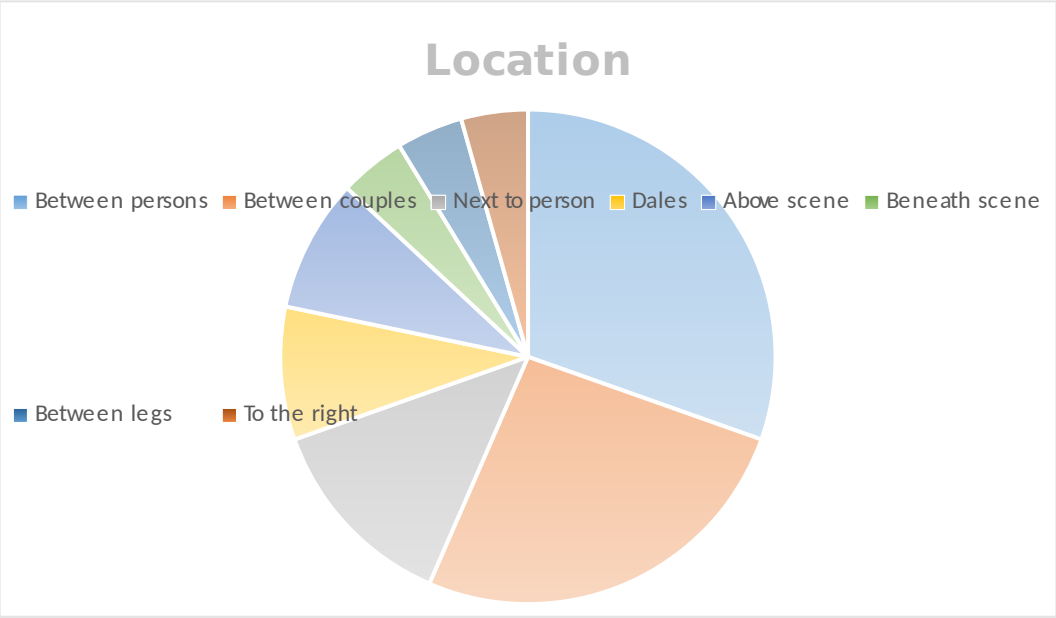



*Figure 21: A circle diagram showing the locations of the opuntia's within the roll out drawings.*

## 9.3. Stage III: Discussion

After the identification and the analysis of the different plants, I will now compare the results in order to look for idiosyncrasies and similarities. In this section all aspects of the iconographic analysis will be discussed separately. After that the discussion moves on to the role the plants might have had in iconography.

### 9.3.1. Iconographic aspects

#### *9.3.1.1. Identification*

Although many plants can be found in the large area that was the habitat of the Moche, only a small number of species is repeatedly represented in the Moche fineline paintings. The distribution is visualized in figure 22.

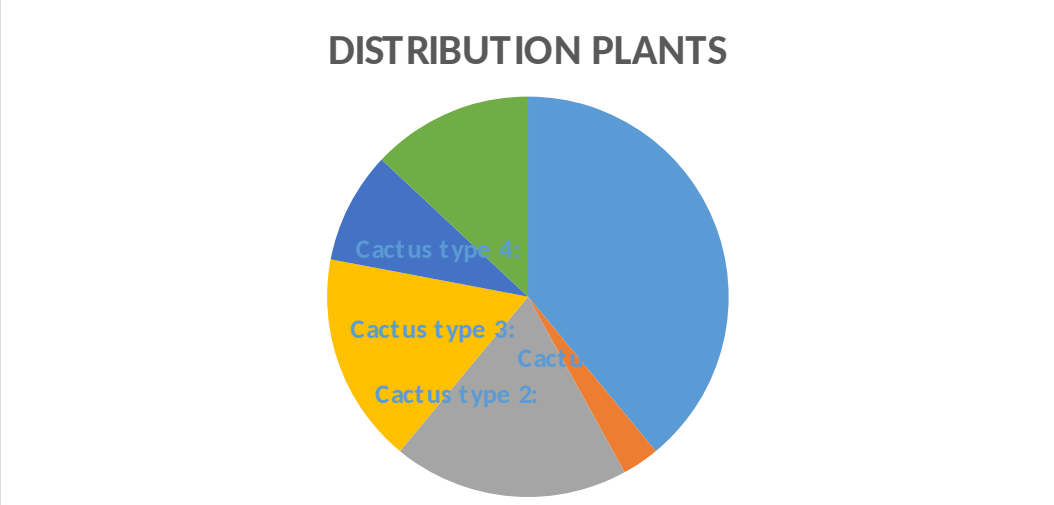



*Figure 22: Circle diagram showing the distribution of the different plant types.*

*Tillandsias* are the plants that occur most frequently, followed by the *cereus/echinopsis* and the *flowering cacti* I was not able to identify. They might be the same plants, depicted in different seasons. However, the strong contradiction between the amount of stems that these cacti have, is inconsistent with the idea of a similar specie. No less than 81% of the flowering cacti are depicted with only one stem, while this number is much smaller (8%) in the case of the *cereus/echinopsis*.
For the time being, no assumption of the identity of the fourth plant group will be made, for more plant research in the region is needed to be able to draw definitive conclusions.

Of all images, 13% include species that were underrepresented or that were excluded for other reasons. For example, the flowers alone and trees are left out, as well as the *Portulacaceae*, because it was limited to one type of scene and differed too much in terms of its form to fit into this analysis. Some of those plants are present in the roll out

drawings I made myself and I will show them below to give an indication of its appearances.

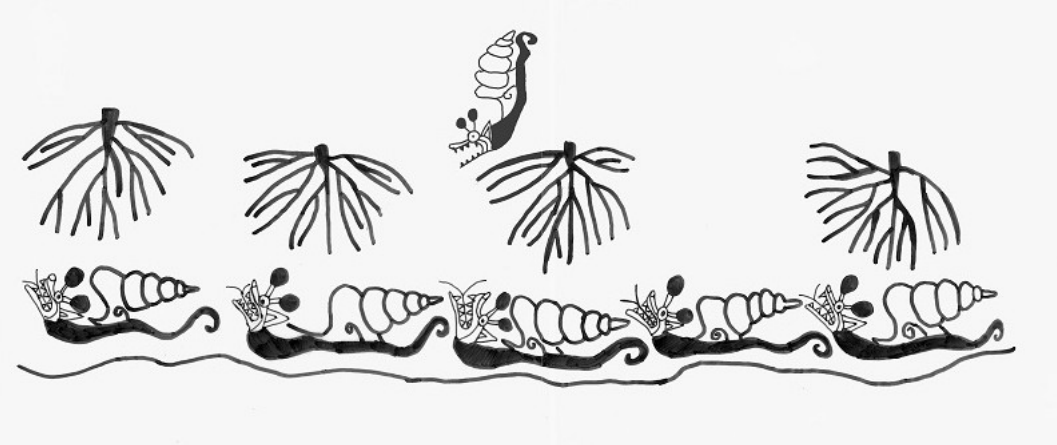


*Figure 23: A roll out drawing of snails with characteristics of felines and snakes, accompanied by plausibly water plants.*

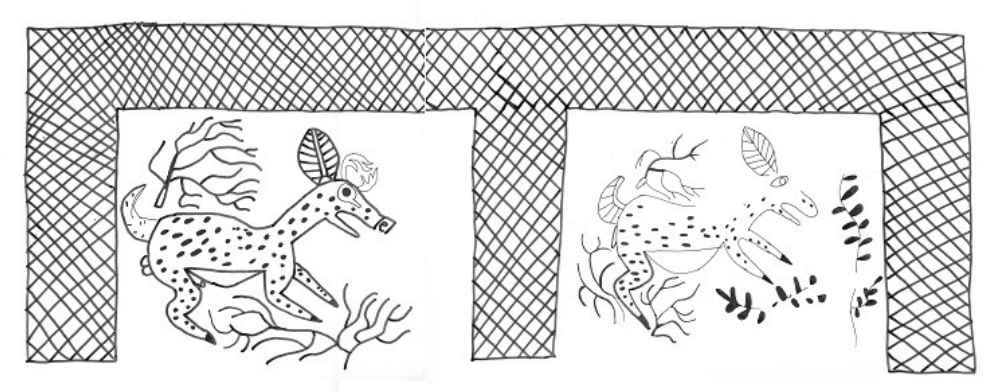


*Figure 24: A roll out drawing of two deer, with plants. The right one is a* Portulacaceae.

*Figure 25: A roll out drawing of water fowl, fishes and water plants.*

#### *9.3.1.2. Scenes*

A comparison of the percentages for each scene in which one of the plant types occur indicates that combat scenes and hunting scenes are the most important. Although to a smaller extent, the depiction of warriors, ritual runners and animals is also common, even though they still play an important role. Depictions of ceremonies and a procession are present as well, but rather infrequently. Other important scenes that are discussed much in Moche iconography are, contrary to my expectations, not represented. These are, for instance, the revolt of the objects (Quilter 1990), the presentation of a goblet (Donnan 1986), the funeral (Donnan and McClelland 1979), tule boats (Bawden 1995), decapitation (Cordy-Collins 1992) and erotic scenes (Bourget 2006).

#### *9.3.1.3. Animals*

Most plants are depicted together with animals. *Tillandsias* are accompanied by them the least often, as only 54% of the images show animals. For the other plant types this number is higher, especially for the *opuntias*, which occur exclusively with animals.
In order of frequency, the following animals are depicted in a relation with plants: (humming) birds, deer, snakes, felines, snails, dogs, foxes, lizards and dragonflies.
Most of these animals (birds, deer and snails) were hunted by the Moche, often with help of dogs. Another important animal that was hunted is the sea lion, but sea lions are not present in this corpus. I have already pointed to the relation between these game animals and the ritual battles that took place to get prisoners that could be offered. It is plausible that the high frequency of these animals is related to the large amount of hunting and battle scenes.
Other animals could have been depicted for their predator qualities, like the snakes, birds, felines and foxes, but strangely enough other predators that are known from murals, e.g. octopi and spiders, are not represented. They both show similarities with the behaviour of the Moche, because they eat and capture other predators and catch their victims with tentacles and spider webs, while the depicted victims have a rope around their necks. Furthermore spiders are also connected with fertility, because they protect the crops from insects and are associated with rain (Lau 2012, 111). Since the ritual battles also symbolize fertility, both seem to be interrelated, although they are still absent in this corpus.

#### *9.3.1.4. Amount of plants, leaves and branches*

When looking at the amount of plants that are depicted in one drawing, we can conclude that the sum of the percentages of each plant type shows that the occurrence of 2 plants of the same species is the most common, followed by 1 and 4 plants of the same type. Small numbers of the same type of plant are the most common and the larger numbers of the same type of plant, between 9 and 30, are almost only observed for *tillandsias*.

No pattern could be observed in the depiction of certain numbers, which also applies to the amount of branches and leaves. With regard to the depiction of plants, there do not seem to be numbers with a special value or symbolism.

A pattern could also not be found in the depiction of the flowers of the *tillandsias*. There does not seem to be a correlation with the side that the flowers are hanging to. The occurrence of flowers that turn to right and to left within the same painting is not strange at all, even though it is in real life, since the flowers turn their buds to the direction of the wind, which is something the Moche must have known too.

Another oddity is the depiction of double buds, which occurred in 18% of the cases, but is only rarely observed in the landscape (Rauh and von Bismarck 1996, 39).

#### *9.3.1.5. Spikes*

The heterogeneity within the same plant type becomes apparent in more ways. Regardless of which cactus one examines, plants will be represented with and without spikes. The only plant type by which a lack of spikes prevails, is the *Browningia* and one should keep in mind that this minority is based on a very small sample of images.

The *flowering cacti* are equipped with spikes in a large number, no less than 94% of these plants is shown with spikes, while the numbers for the *opuntias* and *cereus/echinopsis* are far more equal: 58% of the *cereus/echinopsis* and 56% of the *opuntias* are equipped with spikes.

Plants with and without spikes are depicted in the same paintings, taking away the possibility of a correlation with certain scenes or seasons.

#### *9.3.1.6. Roots*

A similar situation applies to the presence of roots. There is no plant type that is exclusively depicted with or without roots. However, between the plant types differences can be noted. Only the majority of *tillandsias* and the *echinopsis/cereus* is

depicted with roots. With 76% the *tillandsias* are the specie that shows its roots the most often. By contrast, the *flowering cacti* have roots in only 12% of the cases. This becomes even more strange given the fact that *tillandsias* have no roots that suck water from the ground, in contrast to all other plants.
It is likely that the depiction of roots is not a realistic representation of the plant, but serves another goal. De Bock notices its resemblance with a penis, suggesting that this plant is a phallic symbol:
"The plant has the strength to turn its flower towards the wind in order to filter the moisture from the air, which could compare to the penis erection capacity. The tillandsia meanders over the desert sand with its lower part dried out ('dead'). In this way the plant appears to combine death and fertility symbolism: from the 'dead' lower part grows the living upper part with the flower (De Bock 2005, 92)."
The combination of death and fertility symbolism is thoroughly explored in Bourget's book "*Sex, Death, and Sacrifice in Moche Religion and Visual Culture*", in which he discusses the relationship between religious beliefs of dead and afterlife with regard to various sexual deeds.
De Bock does not point out the specific added value that the roots have. However, roots connect the visible 'upper world' with the invisible 'under world', and thereby could be considered as an important entity within the landscape that forms a transitional zone.

*Tillandsias* are related to ritual runners, since 65% of the roll out drawings that depicts these plants are involved in this scene. It is striking that such a high percentage cannot be found for other plant species, since other plants are only sporadically depicted around ritual runners.
These plants could be related to the content of the messages that are spread by these *chasquis*. I will however not propose any content, but instead propose that the presence of the *tillandsias* and its possible connection to fertility and the life/death contradiction should not be ignored.

#### *9.3.1.7. Position*

The position in which the plants are depicted shows another example of its heterogeneity. They are shown in all possible positions: upside down, diagonal (in all four directions), horizontal and vertical. Although a normal, vertical position is the most common, a diagonal position with the top above is also very common. The other positions are less commonly represented, although they are all observed for more than one plant type.

Diversity is also observed with regard to the way in which the plants are placed: in the ground or floating around. The majority of the *Tillandsias*, *Cereus/Echinopsis* and *Opuntias* are depicted while floating around, whereas the *Browingia* and the *flowering cacti* are mainly depicted on the ground. There is especially a strong contrast between the *Tillandsias* and *Browingia*, since the first specie is floating in 93% of the cases, while the last does so in 0% of the cases.
Without a doubt the Moche were very aware of the way they depicted the plants and I assume that there was a reason why they were not shown in an uniform way. However, I am not able to pose any suggestions.

### 9.3.2. The role of plants

After this discussion of the iconographic aspects , we will now look at the possible roles plants could have had in iconography. What could have been their function? In order to answer this question we will turn back to hypotheses that are mentioned before.

#### *9.3.2.1. Plants as location indicators (Donnan)*

First of all, Donnan stated that the depicted plants described a certain location in which an activity took place. It is likely that the Moche were very aware of their landscape and all members of the society might have known where certain plants were growing. However, I have already concluded that the amount of species is very limited. A repetition of their endemic boundaries (based on the elevation) as was given in their description in paragraphs 9.3.1.2., 9.3.2.2., 9.3.3.2., 9.3.4.2. and 9.3.5.2, shows the followings heights: 300-3000 metres (*Tillandsia's*), up to 1500 metres (*Browningia)* 2000-3000 metres (*Echinopsis*) and 2500-3700 metres (*Opuntia exaltata Berger).* Information about the spreading of the *Cereus* was not on hand. Not only do the habitats of these species cross, but all of them also have plenty subspecies, all adapted to different habitats.
Furthermore, I believe that the depiction of the plants is not naturalistic enough to function as locators. One of the things that surprised me, is the limited length of the cacti. In the roll out drawings they never outrun humans in height, while all of these plants can get up to 5 metres long. However, a possible reason for this could be the fact that it is more time consuming to depict a much larger plant. Still the lack of details is striking. Much attention is paid to the way humans are dressed, or to depict animals as realistic as possible, but for the plants it seemed sufficient that they were merely recognizable as plants.

For example, the amount of ribs of the *Echinopsis* was of great importance in Peruvian prehistory (see paragraph 9.3.3.3.2.), but still there are no cactus plants in this corpus that show ribs. Apparently the depiction of subspecies of the cacti did not matter, from which one might conclude that details, of importance when serving as a locator, was not essential.

#### *9.3.2.2. Plants as organizing principles (De Bock)*

Another archaeologist who came up with an explanation for the depiction of plants, was De Bock. In his book "Human Sacrifices for Cosmic Order and Regeneration. Structure and meaning in Moche iconography Peru, AD 100-800" De Bock shows effectively how very complex drawings are organized with help of little objects, animals and plants. However, in the corpus I studied no such complex drawings were present, in which numerous personages were interacting with each other. De Bock's suggestion could be true, but neither affirmative nor disproving remarks can be made on the basis of this analysis. However, when examining the location of the plants with respect to personages, they appear to be placed between figures or between couples of interacting figures very often. I cannot decide to what extent plants are used to organize the scene, but it cannot be denied that plants are placed between figures and this could eventually be a distinguishing factor in more complex scenes.

#### *9.3.2.3. Plants as symbolic entities (Bourget)*

The last suggestion comes from Bourget, who states that plants might have had a symbolic function (Bourget 1994, 95). For reasons already discussed (f.e. the presence of roots and the natural shape of the plants) I believe that the plants are part of a symbolic system, that Bourget merely shed some light on with his work that connected sex with complex concepts of life, death and the afterlife. This suggestion would explain the lack of details by which plants can be identified and give a reason why scenes of hunting and combat are known with such a high frequency in this corpus, since they both lead to the capture and sacrifice of human beings.

However, the assumption of symbolic functions does not explain the variety in which the plants are occurring. Of course this could be nothing but artistic freedom, but the possibility of another underlying significance that we are not able to understand cannot be ruled out.

## Conclusions

Nowadays, remarkably little is known about the role of plants in the society of the Moche and also other cultures that lived in the Andes. Previously cited archaeological, ethnographic and ethnohistoric research has shown that uncultivated plants were used in different ways: as food, fences, combs, mummy bundles, medicines, tools for shamans, etc.
It is not surprising that plants can be found on the iconography on pots, but extensive research still has not been carried out before. Therefore, the purpose of this thesis was to extend the knowledge about the role of plants on pottery.

With help of the pre-iconographic analysis proposed by Castillo, evidence for two different types of production centres in Moche society was provided: one that produced pottery in commission of the elite and one in commission of the common people. It is this pottery financed by the elite that shows these beautiful fine line paintings. However, archaeological investigations indicate that this decorated pottery was not reserved for the elite, but can be found in all layers of the society. Everyone could see the often political, religious and ideological messages of the elite spread by means of these pots.

The second stage of the analysis shed light on different iconographic aspects, which enables me to answer the sub questions posed in the introduction. I will now deal with these questions separately, creating a clear overview of the results in this thesis.

### *What plants are depicted?*

A surprisingly small amount of plants was depicted in the roll out drawings. As noted before, the *tillandsia* and *cereus* have already been identified by Larco Hoyle. The *opuntia*, *echinopsis* and *browningia* I have identified myself by comparing the images with photographs in cactus encyclopaedia and by studying their habitats. A last specie, which I called the *flowering cacti* thus far, has not been identified before. At first sight this specie shows similarities with the *cereus* and *echinopsis* in a flowering state, but more detailed iconographic research showed characteristics that make a similarity with a flowering *cereus* and *echinopsis* unlikely.

### *In what scenes do the plants occur?*

The scenes in which the plants occurred also turned out to be limited and it was especially the scenes in which warriors were depicted or the corresponding metaphorical hunting scenes that predominate. However, the scenes in which ritual

runners are shown are striking. They seem to have a special relationship with *tillandsias*, for which a convincing explanation is not at hand.

*Are the plants depicted in a uniform way?*

The analysis showed that not all plants were depicted in the same way, as no uniformity was discovered in the iconographic aspects. The amount of plants that is depicted differs, as well as the amount of leaves, buds or branches they have. Plants are not exclusively depicted with or without roots or spikes, but show an enormous variety. The same goes for the way in which the plants are positioned within the scene: some are floating, while others stand on the ground. Some stand upright, while others are slightly rotated or are even positioned upside down. All this points to an outstanding artistic freedom or to underlying reasons that have not yet been scrutinized.

*Are there recurring numbers concerning the amounts of plants, their leaves or their branches?*

I counted the plants, leaves and branches to see if there were recurring numbers in order to get insight into the existence of symbolic numbers in the scenes. Since calendars take a prominent place in later Andean cultures, I was curious to see if there were numbers that were of importance in the Moche culture. However, no evidence of this could be found in the roll out drawings.

*For what reason could the plants be put there?*

The ultimate goal of this thesis was to discover the reasons that plants were depicted in fine line drawings. Besides the assumption that plants were depicted as a component of the landscape they were part of, three other possible roles were discussed. These ideas circumscribed plants as organizing principles, as location indicators and as symbolic entities. Since these approaches had not yet been tested on a considerable amount of pots, I created a corpus of almost hundred pots to seek evidence for these hypotheses.

In the corpus no images were available that could deny or support De Bock's idea of an organizing principle. In large, complex drawings plants could fulfil this role, but in less complex paintings, which occur far more frequently, such an organizing principle is not required.

The role of plants as a location indicator is not convincing either, given the lack of details in the design of the plants. Outstanding features that refer to a specific (sub)specie do

not exist and the few species that can be distinguished live in overlapping habitats and therefore could hardly refer to different locations.

In my opinion, the most obvious role of the plants is symbolic. Given the fact that the depiction of sexual organs is not uncommon in Moche iconography, a resemblance between the penis and the *tillandsia* is not far-fetched. The same applies to the presence of roots, which indicate a fertile ground and make up a transition-zone between the visible and invisible world as well. The fact that these plants are mostly occurring in scenes which already have a relationship with dead and fertility, makes this assumption even stronger.

However, it is hard to find evidence for this symbolism, since we cannot step into the realm of thought of the Moche. More research is needed in both iconographic, archaeological and ethnobotanical fields. An analysis of a larger amount of pots could be valuable, just as an examination of the presence of plants in the iconography of other cultures that lived in the same area as the Moche.

At last we need to be aware of the assumption that there might not be a deep thought behind all this at all: maybe one just wanted to decorate the landscape. However, it still needs to be noted that the plants are depicted in a less realistic way than what we are accustomed to, since the they were sometimes floating and were not always depicted straight.

**Abstract**

This thesis aims to fill the gap in research on the role of plants in Pre-Columbian societies in the Andes. In this thesis, the role of plants in Moche iconography was studied. An analysis was conducted on a corpus of 95 roll-out drawings. The roll out drawings are made of pots that belong to phases III and IV.

In this thesis a method conceptualized by Luis Jaime Castillo was used. As a distinction was made between three stages in the analytical process, attention was paid to different aspects. First of all, the context in which the pots were produced and distributed was described. This stage was called the pre-iconographic analysis.

Subsequently, the images on the pots were examined in the second stage, called iconographic analysis. The recurring plants were identified and described, their known uses were given and at last their iconographic situation was explored.

In the third stage, the plants were compared. The small amount of depicted plant species was striking, for only the *tillandsia*, *browningia*, *opuntia*, *cereus* and *echinopsis* species were identified, despite the enormous area in which the Moche lived.

A comparison between the physical description of the plants and its iconographic representation showed a striking lack of details. This was not expected if these plants had implied specific regions within the landscape and makes it doubtful whether the plants played a possible role as location indicators. The presence of roots, their floating positions and the relation between cacti and scenes that are connected with death, fertility and afterlife suggest a symbolic system of which these plants also formed part. Whereas the cacti were mainly connected to scenes of violence, the tillandsias were often shown with ritual runners, a result for which no explanation could be given.

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## Appendix 1: Self-made roll out drawings

In this appendix the roll-out drawings that I have made are shown. Some information about the process is also given, so that readers who understand the advantages of creating roll out drawings themselves have an idea of how to start.

### 1. The creation of roll out drawings

In the first part of the twentieth century the first roll  out drawings were created. This was often done by artists, who were hired by archaeologists. However, these artists lacked the cultural knowledge, which sometimes led to errors, because scenes were split at wrong places (Donnan and McClelland 1999, 298).
During the making of the drawings choices have to be made. Since the original drawing is painted on a spherical object, the dimensions change when this is copied to a flat surface. Parts overlap or are suddenly separated from each other. During the drawing process you have to decide how you will solve these problems, keeping in mind that you are constantly manipulating the drawing to your own insight.

### 2. How to make roll out drawings

Edward de Bock taught me how to make the roll out drawings. Years ago he learned it from Donna McClelland, who dedicated many years to create roll out drawings of Moche pots.

#### 2.1. *Photographing*

First of all I had to find a camera that could focus manually. This was not easy, since most camera's do this automatically, but after asking around I found someone who was willing to lend out his camera to me.

The pot was set on a table which was covered with white paper. First of all I wrote down the number of the pot and then I made a normal picture of the four sides. Thereafter I had to zoom in and focus the camera manually. I had to keep the same focus for the whole pot, otherwise I would end up with pictures from different distances, which would never fit.

I had to move my camera around the pot as if it was some kind of airplane, making pictures of every spot. It was very important the camera was at right angles with the surface. For the lower half of the pot, I had to lay the object down. I used a lump of paper to prevent the object from rolling away.

#### 2.2 D*rawings*

For every pot I took approximately sixty photos, which I had to put together. Because of the bulging of the pot, only the most central part could be used. The following materials were needed to create the drawings: markers of different thickness, tape, a special kind of knife to use as an eraser, and large pieces of polyester film (a special kind of paper that is transparent and does not crumble).



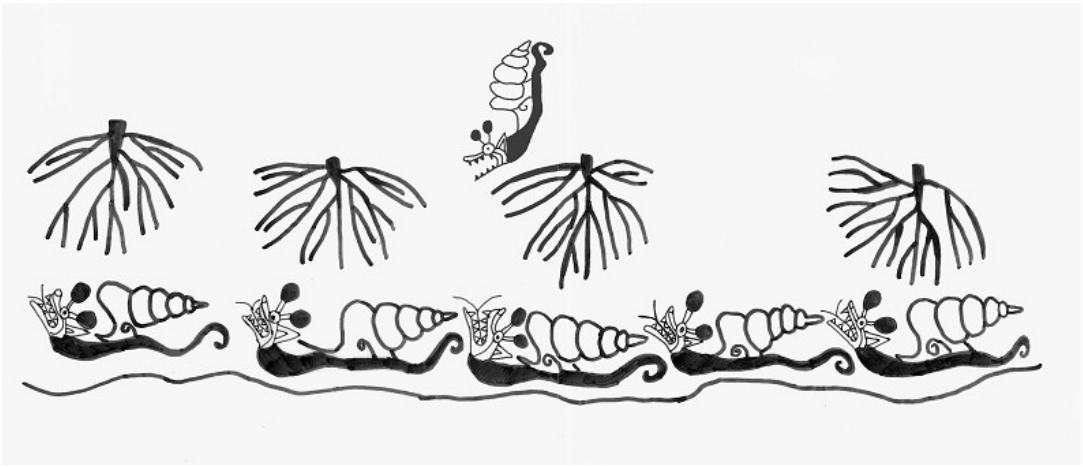
*Figure 25: Connection of the different pictures*

I connected the different pictures with the tape (figure 25). When the whole drawing was complete, I put the paper over the pictures and drew the lines and coloured the black spaces.

**Roll out drawings from het Wereldmuseum Rotterdam**

**First pot (WMR 73388): birds with a goblet in between**

**Second pot (WMR 70716): snails**

**Third pot (WMR 73387): two anthropomorphic ritual runners**

**Fourth pot (WMR 28331): two anthropomorphic warriors**


WMR
29331

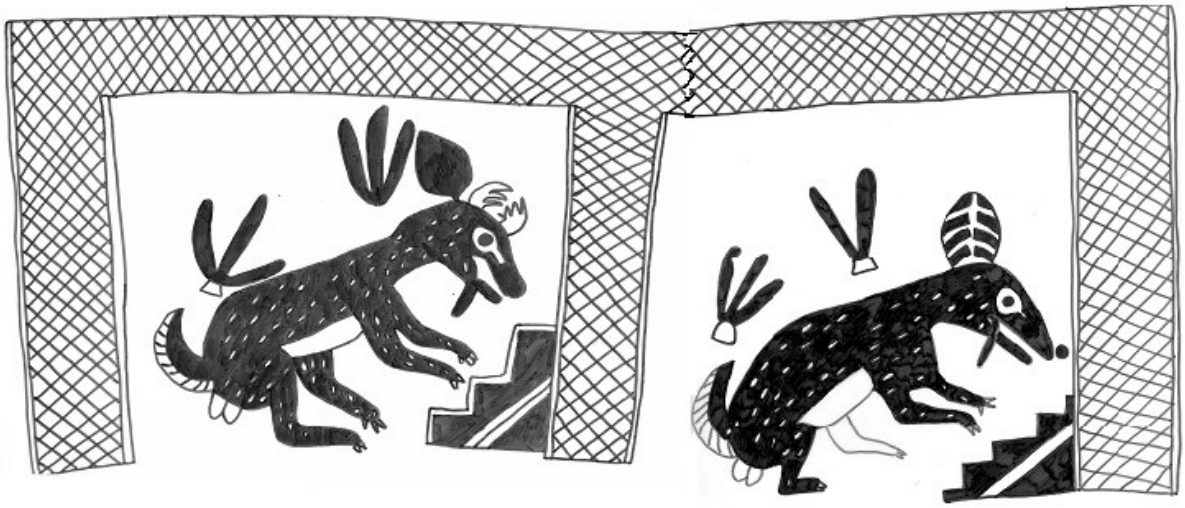
**Fifth pot (WMR 75655): warriors in combat**


**Sixth pot (WMR 73374): warriors in combat**

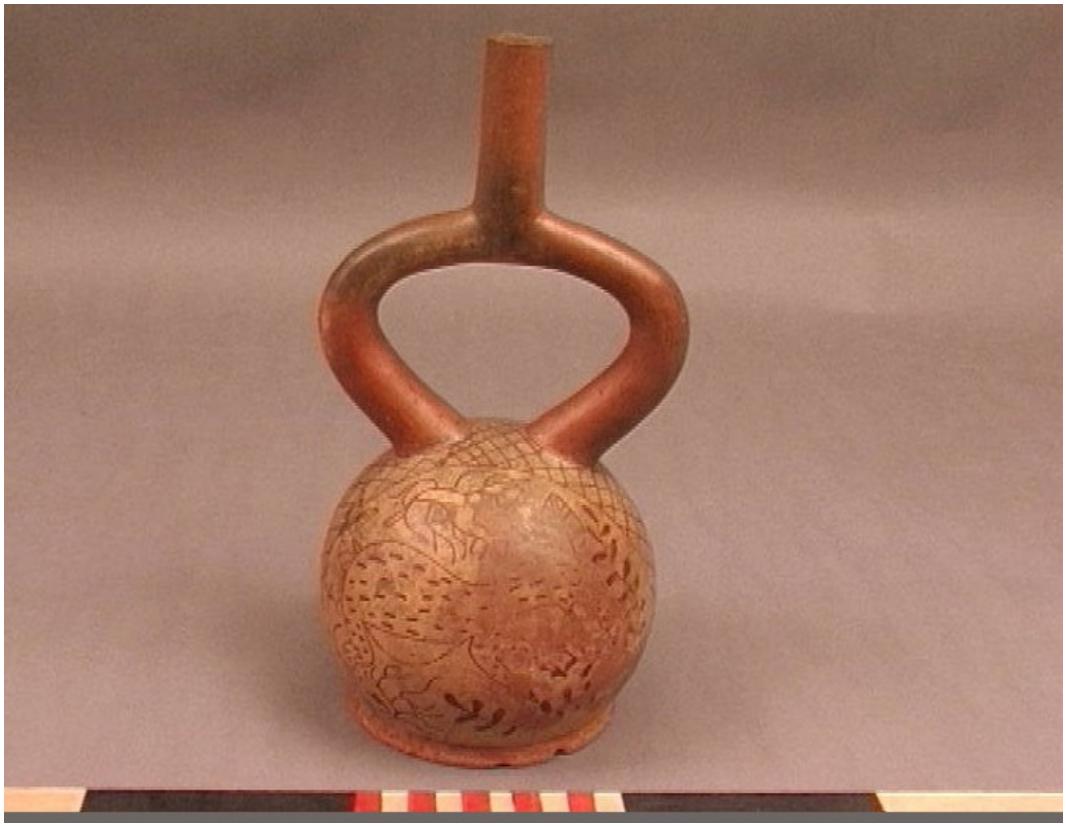
**Pots from het Museum Volkenkunde in Leiden**

**Seventh pot (1872-77): deer**

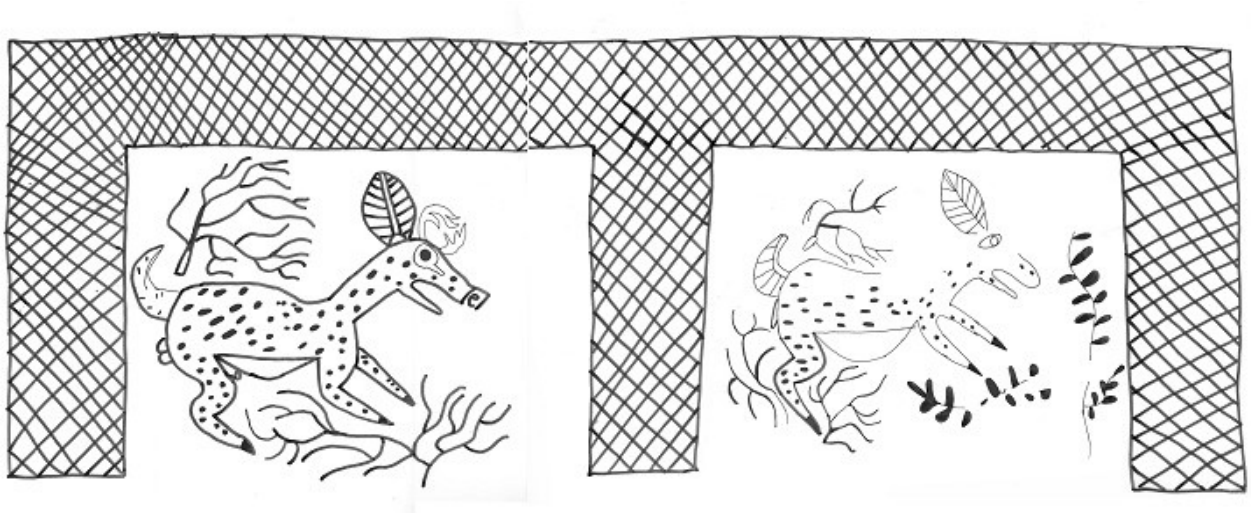
*Source: the database of the museum.*



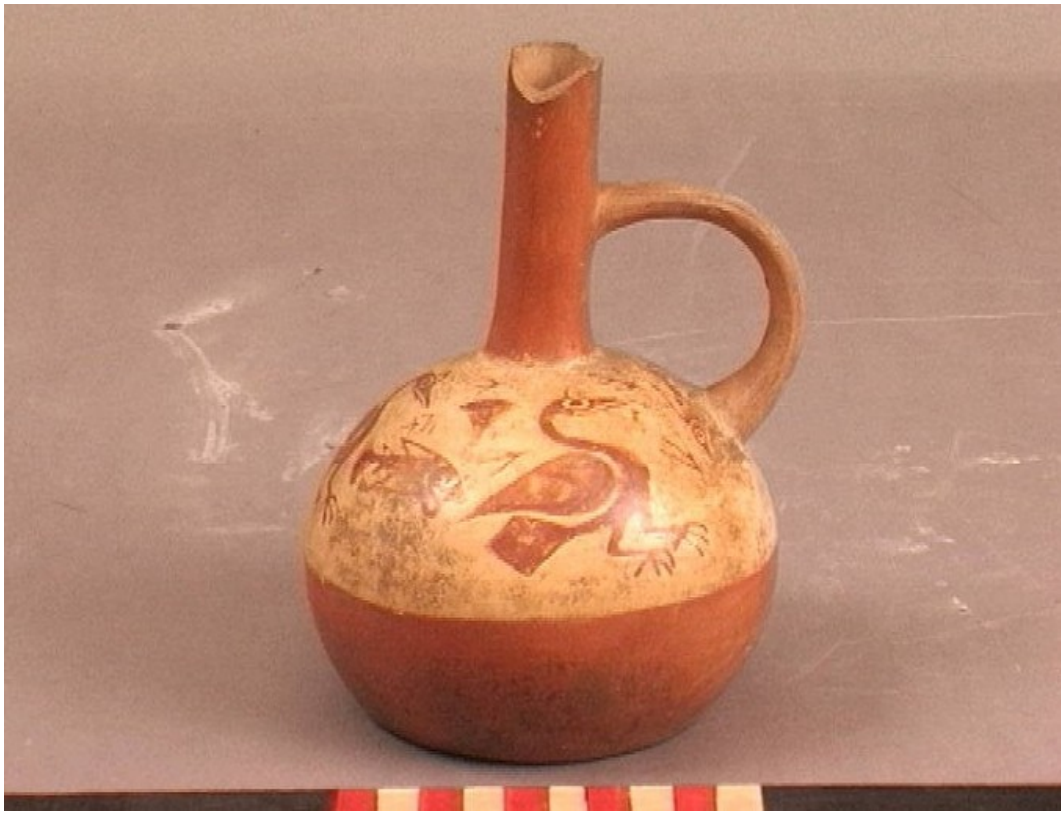
**Eight pot (1872-86): deer**



*Source: the database of the museum.*



**Ninth pot (1872-45): waterfowl, fishes and waterplants**



*Source: the database of the museum.*

**Appendix II: Roll out drawings made by Donnan and McClelland.**

In this appendix all roll out drawings, made by Donnan and McClelland, that formed the basis of my research are shown. They are all coming from the book “Moche fine line painting: its evolution and its artists”. The specified origins from the pots are also copied from their book. Unfortunately this is limited to the museum from which the pots came, lacking inventory numbers.

*Realistic portrayal of warriors; private collection; figure 1.20.*

*Deer and felines in desert scene; Museo Nacional de Antropología, Arqueología e Historia, Lima; Figure 3.18.*

*Complex warrior narrative scene; private collection; figure 3.29.*

*Ceremonial badminton scene; Museo Arqueológico Rafael Larco Herrera, Lima; figure 3.31.*

*The warrior narrative: warriors engaged in combat; Museo Arqueológico Rafael Larco Herrera, Lima; figure 3.48.*

*The warrior narrative: warriors engaged in combat; Museo Arqueológico Rafael Larco Herrera, Lima; figure 3.49.*

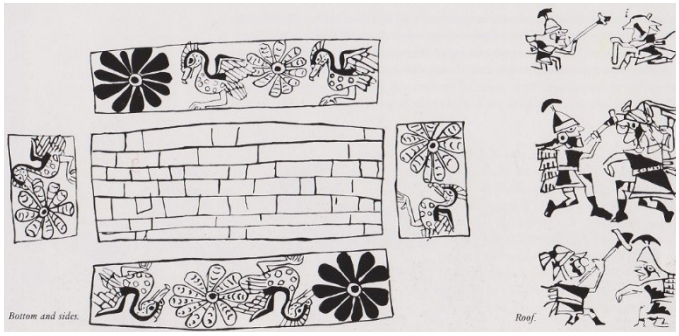
*Warriors and prisoners; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 4.2.*

***Warriors and prisoners; Museum für Völkerkunde, Berlin; figure 4.6.***

*Warriors; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 4.9.*

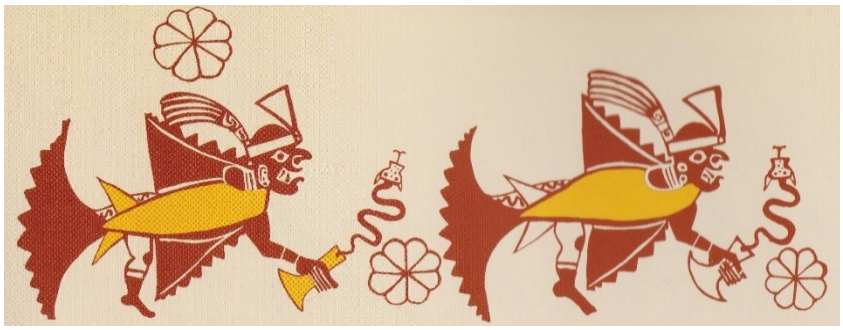


*Ceramic box with scenes of an adobe structure, birds, flowers and warriors; private collection; figure 4.15.*




*Warriors in combat; private collection; figure 4.18.*

***Coca ceremony; Linden-museum, Stuttgard; figure 4.19.***



***Demon fish; Museum Amano, Lima; figure 4.20.***

***Complex composition with warriors and prisoners; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 4.21.***



*Deer hunt; private collection; figure 4.22.*

*Warriors in combat; Museum voor Volkenkunde, Rotterdam. Drawing by Edward de Bock; figure 4.24.*

***Foxes, feline, plants and weapons; Museo de la Nación, Lima; figure 4.51.***

*Animated weapons and helmets capture prisoners; The Art Institute of Chicago; figure 4.71.*

*Bean and stick ceremony; Museo Arqueológico Rafael Larco Herrera, Lima; figure 4.75.*

*Snail hunting; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 4.86.*

*Bird hunting; Museo Arqueológico Rafael Larco Herrera, Lima; figure 4.88.*

*Deer hunting; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 4.89.*

*Ceremonial badminton; private collection; figure 4.91.*

*Erotic scene; private collection; figure 4.95.*

*Ritual runners; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 4.97.*

*Warriors engaged in combat, parading captives, and presenting captives to another individual; private collection; figure 4.105.*

*The warrior narrative, beginning at the bottom of the chamber and culminating with a part of the Sacrifice Ceremony on the upper spout; Übersee-Museum, Bremen; figure 4.106.*

*Anthropomorphized animals dressed as human warriors carrying clubs and shields; Museum für Völkerkunde, Berlin; figure 4.107.*

*Combat between anthropomorphized beans and deer; private collection; figure 4.109.*

*Birds; private collection; figure 5.10.*

***Crab deity; Linden-Museum, Stuttgard; figure 5.60.***

*Ceremonial badminton; private collection; figure 5.72.*

*Deer and felines; Museum für Völkerkunde, Berlin; figure 6.10.*

*Anthropomorphic ritual runners; private collection; figure 6.26.*

*Anthropomorphic ritual runners; private collection, Photograph courtesy of José Antonio de Lavalle; figure 6.27.*

*Anthropomorphic ritual runners; Museo Arqueológico Rafael Larco Herrera, Lima; figure 6.28.*

*Anthropomorphic ritual runners; private collection; figure 6.29.*

*Ritual runner; the Cleveland Museum of Art; figure 6.30.*

*Ritual runners; British Museum, London; figure 6.31.*

*Ritual runners; Museo de Arqueología de la Universidad de Trujillo; figure 6.44.*

***Ritual runners; Linden-Museum, Stuttgard; figure 6.43.***

*Ritual runners; Museum zu Allerheiligen, Schaffhausen; figure 6.45.*

*Deer hunting; British Museum, London; Figure 6.46.*

*Deer hunting; Museo Nacional de Antropología, Arqueología e Historia, Lima; Figure 6.47.*

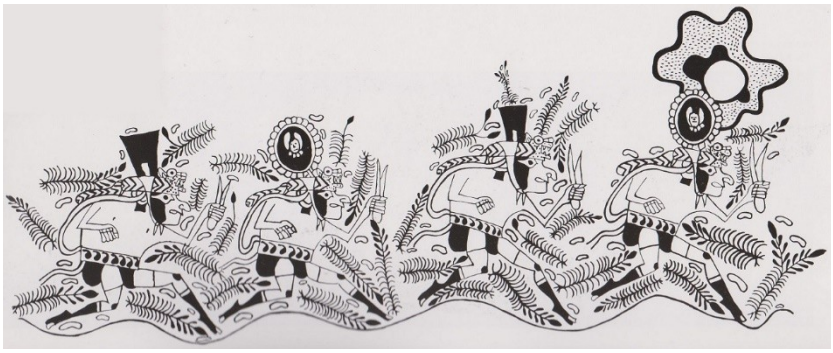
*Snail hunting; UCLA Fowler Museum of Cultural History, Los Angeles; Figure 6.48.*

*Snail hunting; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 6.49.*

*Warriors in combat; private collection; figure 6.50.*

*Warriors in combat and taking of captives; Museum für Völkerkunde, Berlin; figure 6.51.*

*Deer hunting; Dallas Museum of Art; figure 6.57.*



*Ritual runners; private collection; figure 6.58.*

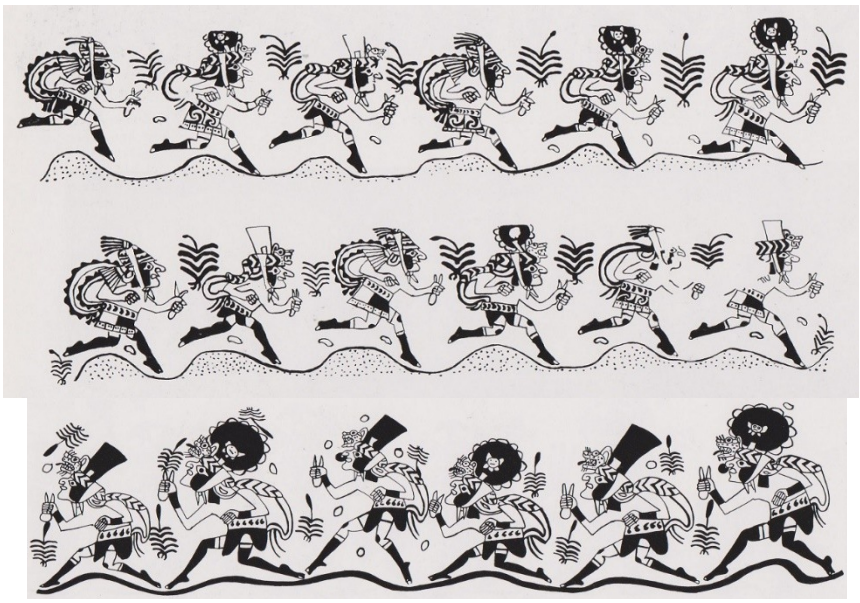
*Ritual runners; private collection; figure 6.59.*

*Ritual runners; Museo Nacional de Antropología, Arqueología e Historia, Lima; Figure 6.60.*

*Ritual runners; Museo Arqueológico Rafael Larco Herrera, Lima; Figure 6.61.*



*Ritual runners; private collection; figure 6.62.*

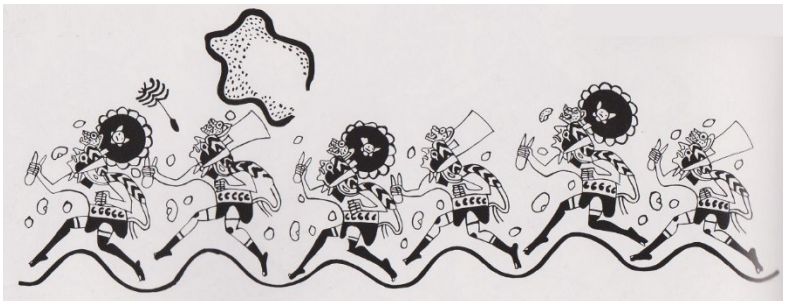


*Ritual runners; British Museum, London; Figure 6.65.*

*Ritual runners; Museo de América, Madrid; Figure 6.66.*

*Ritual runners; Museo Nacional de Antropología, Arqueología e Historia, Lima; Figure 6.69.*

*Ritual runners; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 6.74.*

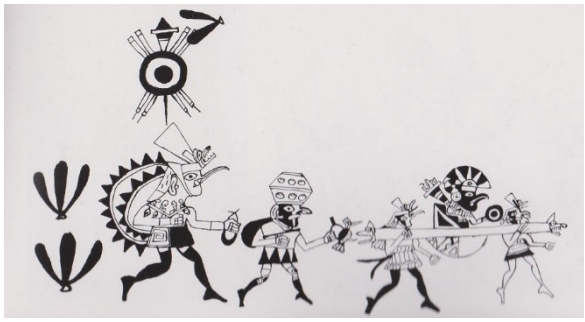


*Ritual runners; British Museum, London; figure 6.75.*

*Ritual runners; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 6.76.*

*Ritual bird runners; British Museum, London; Figure 6.81.*

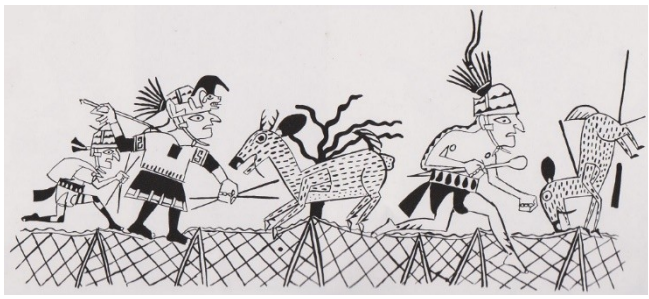
*Deer hunting; The Art Institute of Chicago; figure 6.83.*



*Procession; private collection; figure 6.84.*



*Deer hunting; private collection; figure 6.85.*



*Deer hunting; museum für  Völkerkunde, Berlin; Figure 6.86.*

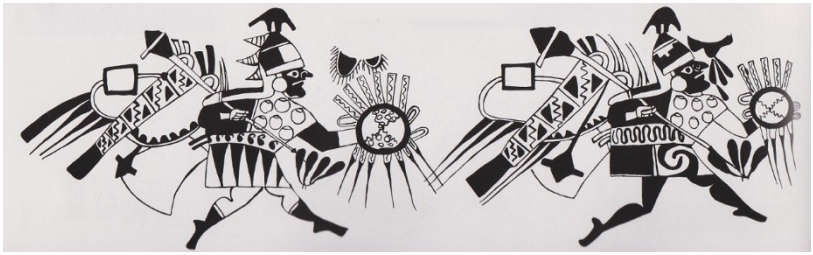
*Deer hunting; UCLA Fowler Museum of Cultural History, Los Angeles; Figure 6.88.*

*Deer hunting; private collection; figure 6.89.*

*Deer hunting; Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge; figure 6.90.*

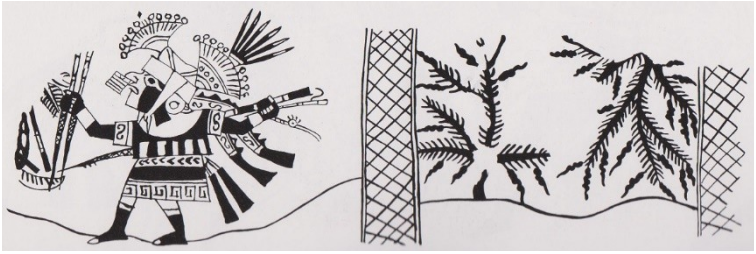
*Deer hunting; British Museum, London; Figure 6.93.*

*Anthropomorphic bean warriors; private collection; figure 6.103.*



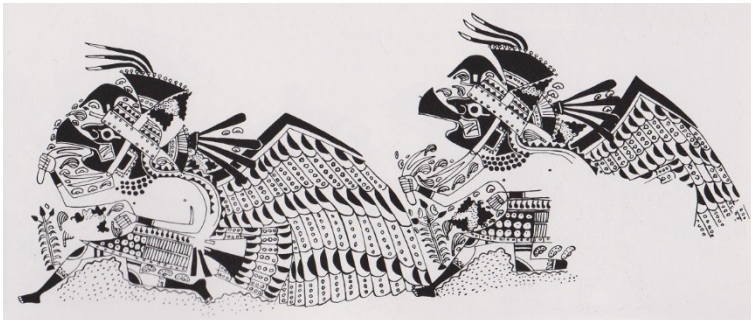
*Warriors; private collection; Figure 6.104.*

***Deer hunting; Museo Chileno de Arte Precolombino, Santiago; Figure 6.107.***

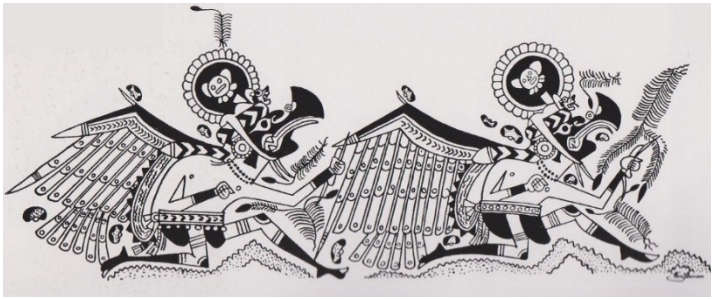


*Deer hunting; private collection; figure 6.108.*

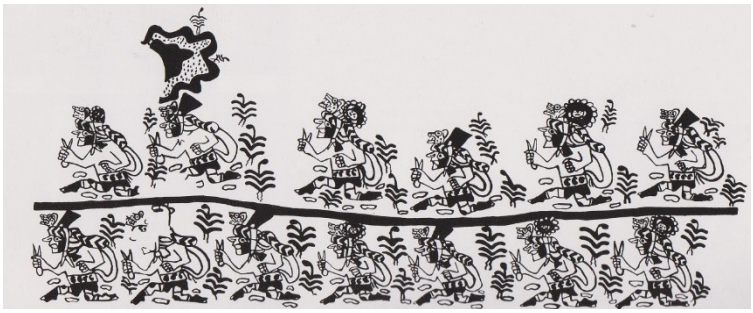
*Anthropomorphic bird warrior; Museo Nacional de Antropología, Arqueología e Historia, Lima; Figure 6.109.*



*Anthropomorphic ritual runners; British Museum, London; Figure 6.110.*



*Anthropomorphic ritual runners; Museum für Völkerkunde, Berlin. Drawing after Kutscher 1954: fig. 71.; Figure 6.111*



*Ritual runners; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 6.117.*

*Ritual runners; British Museum, London; Figure 6.118.*

*Ritual runners; British Museum, London; Figure 6.119.*



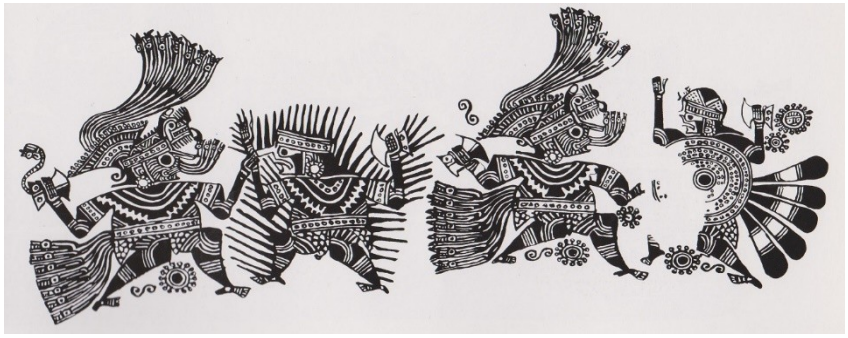
*Anthropomorphic bird warriors; Museo Nacional de Antropología, Arqueología e Historia, Lima; figure 6.120.*

*Anthropomorphic bird warriors; Rautenstrauch-Joest-Museum für Völkerkunde, Cologne; figure 6.121.*

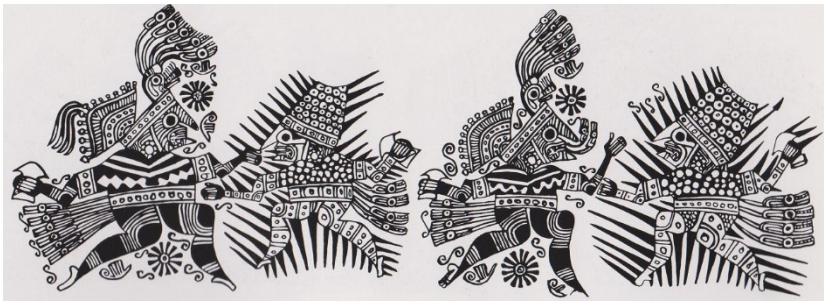
*Anthropomorphic bird warrior; private collection; figure 6.122.*

*Anthropomorphic bird warriors; private collection; figure 6.123.*

*Ceremonial badminton; private collection; figure 6.144.*



*Battle scene between maritime deities; UCLA Fowler Museum of Cultural History, Los Angeles; figure 6.149.*



*Battle scene between maritime deities; Museo Chileno de Arte Precolombino, Santiago; figure 6.154.*

Appendix III: Results analysis

Below the outcomes of the analysis can be found. All aspects are count and transformed into percentages to simplify comparisons.

| | **Tillandsia's** | **Cactus type I** | **Cactus type II** | **Cactus type III** | **Cactus type IV** |
|---|---|---|---|---|---|
| **Amount of images** | 37 | 3 | 18 | 16 | 9 |
| % | 39 | 3 | 19 | 17 | 9 |
| **Amount of images** | 332 | 6 | 44 | 80 | 28 |
| % | 68 | 1 | 9 | 16 | 6 |
| | | | | | |
| **Scenes** | | | | | |
| Animals | 0 | 33 | 11 | 0 | 25 |
| Ceremony | 0 | 0 | 11 | 6 | 0 |
| Combat | 13 | 33 | 11 | 38 | 25 |
| Hunting | 8 | 33 | 11 | 31 | 25 |
| Procession | 3 | 0 | 6 | 0 | 0 |
| Ritual runners | 65 | 0 | 11 | 6 | 0 |
| Warriors | 11 | 0 | 39 | 19 | 25 |
| | | | | | |
| **Animals** | | | | | |
| Not present | 46 | 33 | 22 | 19 | 0 |
| Present | 54 | 66 | 78 | 81 | 100 |
| | | | | | |
| Birds | 26 | 0 | 58 | 30 | 15 |
| Deer | 13 | 50 | 23 | 10 | 23 |
| Dogs | 3 | 0 | 0 | 10 | 8 |
| Dragonflies | 3 | 0 | 0 | 0 | 0 |
| Hummingbirds | 21 | 0 | 7 | 25 | 23 |
| Felines | 3 | 25 | 12 | 0 | 8 |
| Foxes | 8 | 0 | 0 | 0 | 8 |
| Lizards | 8 | 0 | 0 | 0 | 0 |
| Snails | 0 | 0 | 0 | 15 | 8 |
| Snakes | 13 | 25 | 0 | 10 | 8 |
| | | | | | |
| **Amount of flowers** | | | | | |
| 0 | 2 | x | x | x | X |
| 1 | 80 | x | x | x | x |
| 2 | 18 | x | x | x | x |
| | | | | | |
| **Amount of plants** | | | | | |
| 1 | 8 | 33 | 17 | 13 | 22 |
| 2 | 14 | 33 | 17 | 31 | 44 |
| 3 | 6 | 0 | 17 | 6 | 0 |
| 4 | 8 | 33 | 17 | 13 | 11 |
| 5 | 6 | 0 | 6 | 0 | 11 |

| | | | | | |
|---|---|---|---|---|---|
| 6 | 14 | 0 | 6 | 6 | 0 |
| 7 | 8 | 0 | 11 | 0 | 0 |
| 8 | 6 | 0 | 11 | 6 | 11 |
| 9 | 0 | 0 | 0 | 6 | 0 |
| 10 | 6 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 19 | 0 |
| 12 | 3 | 0 | 0 | 0 | 0 |
| 13 | 3 | 0 | 0 | 0 | 0 |
| 14 | 3 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | 0 | 0 |
| 17 | 3 | 0 | 0 | 0 | 0 |
| 18 | 3 | 0 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | 0 | 0 |
| >20 | 14 | 0 | 0 | 0 | 0 |
| | | | | | |
| **Direction flower** | | | | | |
| Left | 33 | x | x | x | X |
| Right | 28 | x | x | x | x |
| Middle | 39 | x | x | x | x |
| | | | | | |
| **Amount of branches/leaves** | | | | | |
| 1 | x | x | 8 | 81 | x |
| 2 | x | x | 39 | 8 | x |
| 3 | x | x | 46 | 9 | x |
| 4 | x | x | 3 | x | x |
| | | | | | |
| **Spikes** | | | | | |
| No | x | 71 | 42 | 6 | 44 |
| Yes | x | 29 | 58 | 94 | 56 |
| | | | | | |
| **Roots** | | | | | |
| Yes | 76 | 33 | 58 | 12 | 38 |
| No | 24 | 66 | 42 | 88 | 62 |
| | | | | | |
| **Amount of leaves** | | | | | |
| 2 | 0 | x | x | x | 8 |
| 3 | 0 | x | x | x | 17 |
| 4 | 3 | x | x | x | 8 |
| 5 | 0 | x | x | x | 13 |
| 6 | 18 | x | x | x | 29 |
| 7 | <1 | x | x | x | 4 |
| 8 | 22 | x | x | x | 8 |
| 9 | <1 | x | x | x | 0 |
| 10 | 15 | x | x | x | 0 |
| 11 | 0 | x | x | x | 0 |
| 12 | 4 | x | x | x | 0 |
| 13 | 0 | x | x | x | 0 |
| 14 | 2 | x | x | x | 4 |
| 15 | <1 | x | x | x | 8 |

| | | | | | |
|---|---|---|---|---|---|
| 16 | <1 | x | x | x | 0 |
| 17 | 0 | x | x | x | 0 |
| 18 | 0 | x | x | x | 0 |
| 19 | 0 | x | x | x | 0 |
| 20 | <1 | x | x | x | 0 |
| >20 | 33 | x | x | x | 0 |
| | | | | | |
| **Position** | | | | | |
| Floating | 93 | 0 | 70 | 34 | 67 |
| In the ground | 7 | 100 | 30 | 66 | 33 |
| | | | | | |
| **Direction** | | | | | |
| Diagonal above | 18 | 17 | 17 | 5 | 14 |
| Diagonal below | 6 | 0 | 0 | 1 | 0 |
| Horizontal | 15 | 0 | 15 | 4 | 0 |
| Straight | 54 | 83 | 63 | 83 | 86 |
| Upside down | 7 | 0 | 5 | 8 | 0 |
| | | | | | |
| **Location** | | | | | |
| Above head | 3 | 0 | 9 | 8 | 0 |
| Above scene | 2 | 0 | 0 | 0 | 9 |
| At the end of a rainbow | 0 | 0 | 2 | 2 | 0 |
| Beneath bird | 0 | 0 | 0 | 6 | 0 |
| Beneath feet | 0 | 0 | 0 | 5 | 0 |
| Beneath scene | 0 | 0 | 0 | 0 | 4 |
| Between couples | 1 | 43 | 6 | 22 | 26 |
| Between figures | 40 | 57 | 11 | 18 | 30 |
| Between heads | 23 | 0 | 2 | 0 | 0 |
| Between legs | 3 | 0 | 6 | 0 | 4 |
| Between figure /weaponbundle | 1 | 0 | 6 | 0 | 0 |
| Everywhere | 20 | 0 | 30 | 0 | 0 |
| In dales | 0 | 0 | 0 | 14 | 9 |
| Next to head | 2 | 0 | 6 | 0 | 0 |
| Next to person | 2 | 0 | 15 | 9 | 13 |
| Next/above weaponbundle | 0 | 0 | 9 | 2 | 0 |
| Left of scene | 0 | 0 | 0 | 6 | 0 |
| Right of scene | 0 | 0 | 0 | 8 | 4 |