Niels Hecht

A Relative Sequence of Nasca Style Pottery from Palpa, Peru

Volume 1 : Text

INAUGURAL-DISSERTATION
zur Erlangung der Doktorwürde
der Philosophischen Fakultät der
Rheinischen Friedrich-Wilhelms-Universität zu Bonn

édition scientifique
VVB LAUFERSWEILER VERLAG

Printed in Germany

édition linguistique
VVB LAUFERSWEILER VERLAG

STAUFENBERGRING 15, D-35396 GIESSEN
Tel: 0641-5599888 Fax: 0641-5599890
email: redaktion@doktorverlag.de

www.doktorverlag.de

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vorgelegt von

Niels Hecht

aus Bremen

Bonn 2013

Gedruckt mit Genehmigung der Philosophischen Fakultät der Rheinischen-Friedrich-Wilhelms-Universität Bonn

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Tag der mündlichen Prüfung: 13.10.2010

Acknowledgement

First of all, I would like to thank Markus Reindel, for all the years of support and patience, and for giving me the opportunity to participate in the Palpa Project.
Equally I would like to thank Johnny Isla for his friendly encouragement and for sharing his knowledge on Nasca pottery with me.
Special thanks are dedicated to Gabriela Contreras, Judith Astuhuamán and Máximo López, for the thousands of pottery drawings they made and for their nice company during work and after.
Another special thank goes to Volker Soßna for hours and days of technical help with the Access database.
Furthermore I would like to thank all the people that participated in the Palpa Project during all these years. This work would not have been possible without the efforts of so many people contributing to the project.
Finally, special thanks to the people of Palpa, for making the stays in Palpa so pleasant.

Niels Hecht Bonn, September 2013

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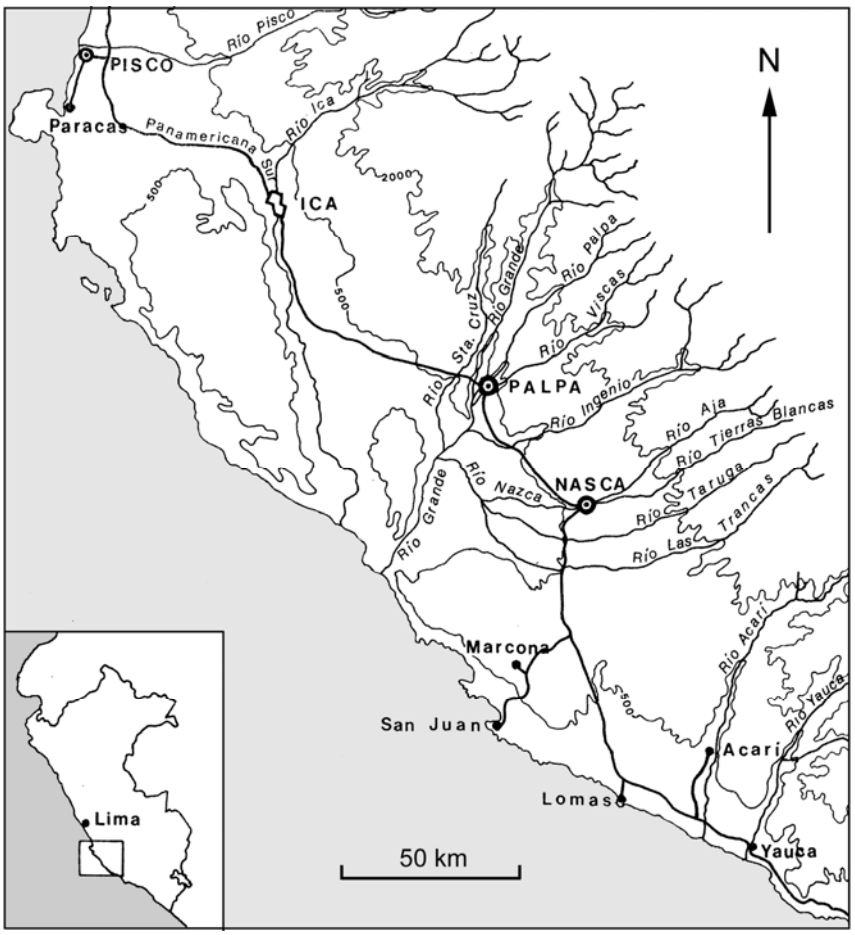
Introduction

This study presents a regional approach to the understanding of Nasca pottery chronology. The principal objective is to establish a regional relative sequence of Nasca pottery for the Palpa area. This will be achieved by description, classification and stratigraphic analysis of a representative sample of about 5000 Nasca pottery fragments from five different settlement sites in the Palpa area. The pottery constituting the study sample comes from excavations by the Archaeological Project Palpa. Since 1997, a team of archaeologists under direction of Markus Reindel (German Archaeological Institute) and Johny Isla (Instituto Andino de Estudios Arqueológicos) has been investigating the prehistoric settlement in the Palpa area (Reindel/Wagner 2009). Among the many archaeological evidence investigated, there was a series of important Nasca contexts that could be documented the recent years (Fux 2007; Hecht 2009; Isla 2009; Lambers 2006; Isla/Reindel 2005; 2006; Reindel/Isla 2001; Reindel/Isla/Koschmieder 1999; Reindel/Isla/Lambers 2006; Soßna 2007).

The results from the analysis of the Nasca pottery from Palpa will be discussed in the context of earlier studies on Nasca chronology that were based on the pottery from the neighboring valleys (Kroeber/Collier 1998; Proulx 1968; Roark 1965; Silverman 1977; Strong 1957; Wegner 1975, 1976).

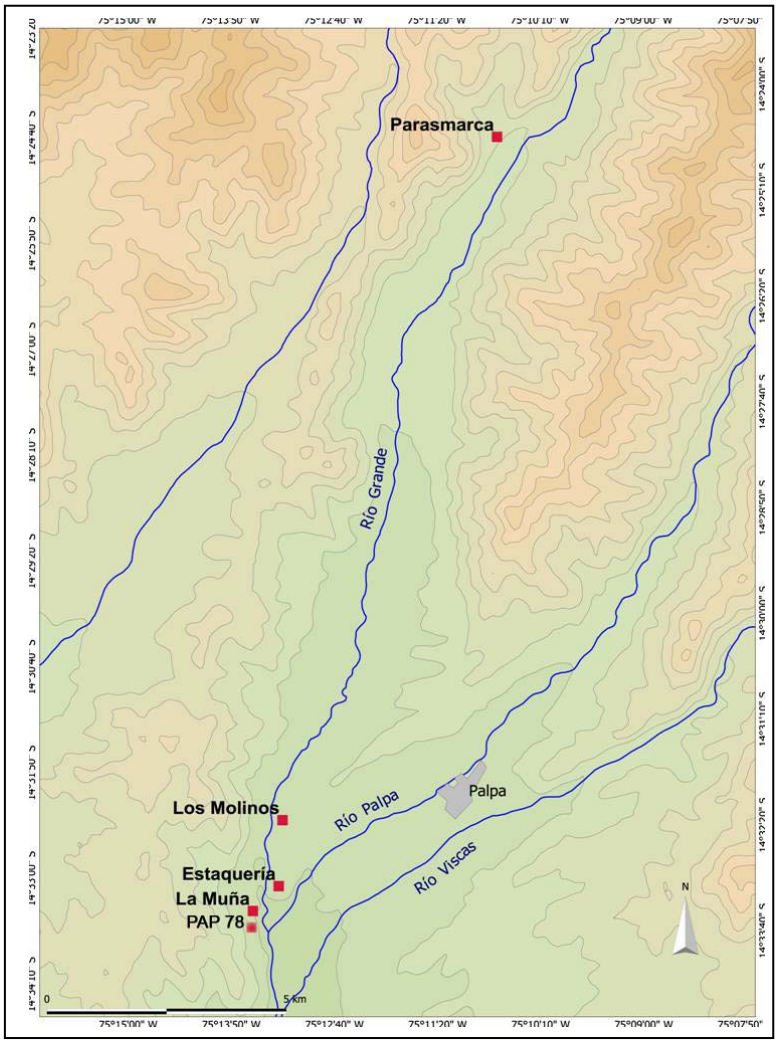


Map 1: The core area of Nasca culture: The Río Grande de Nasca drainage and the Ica valley

The **Nasca-Culture** developed on the South-Coast of Peru, in the Río Grande de Nasca drainage (Map 1) between approx. 150 B.C. and 650 A.D. It is known world wide for its famous desert drawings, called the Nasca-Lines, for its fine textiles, and for the fine polychrome pottery depicting in its unique style the natural and the supernatural world of the Nasca. The archaeological definition of this prehistoric alliterate society is based on the style of its pottery, featuring complex polychrome engobe painting with a well polished surface, applied to the pottery before firing. It is this pottery that in the past provided a basis for several attempts at further chronological division of the 800 year duration of Nasca style.

The Peruvian South coast is shaped by fertile river valleys that run down from the Andes and cross the coastal desert. Precipitation is rare in this region and agriculture is only possible because of the water carried by the rivers as an effect of the annual rainfall in the adjacent highlands (Eitel/Mächtle 2009; Mächtle 2007). Human settlement is concentrated around the areas that can be irrigated with water from the rivers.
The Río Grande de Nasca drainage comprises a series of tributaries that originate in a fan like manner from distant points in the highlands, all merging at an altitude of around 300 meters to form the Río Grande de Nasca, the only outlet to the sea (Map 1). In their upper parts the valleys are separated by steep mountains, the valleys being narrow and deep with little space for agriculture and settlement. In the middle section the valleys become broader and finally merge in a broad basin.
The river valleys provide a clear cut geographical definition delineation of the landscape, with each valley constituting a geographically defined unit. Archaeological survey follows the schematic provided by this specific shape of landscape. Archaeological sites and provenience of findings are recorded according to their valley provenience. This procedure has proved useful in the past as it allows a regionally differentiated treatment of Nasca culture.
For the regional perspective of this study, the Palpa area has been defined as comprising the valleys of Río Grande, Río Palpa and Río Viscas. The upper limitation of the area represented in this study can be defined at about 540 meters altitude of the Parasmarca site in the Río Grande Valley, and the lower boundary at an altitude of about 280 meters at the confluence of Río Grande and Río Palpa (Map 2).

The characteristic **Nasca pottery style** is found in several valleys of the Peruvian South Coast. The core area is the Río Grande de Nasca drainage. The style soon spread to the adjacent valleys of Ica and Acarí. At its peak, cultural influences reached at least up to Cañete to the North, in the highlands up to the Ayacucho area, and to the south as far as Arequipa (Silverman/Proulx 2002).
Nasca pottery is found in settlement contexts and in burials. The settlements associated with the Nasca style feature mainly adobe architecture and small platforms or terraces. In later times stone masonry became more prominent. Quincha walls and light roofs did not prevail. Preservation of the architecture is generally bad, due to erosion and to the extraordinary looting activity in the region. The pottery and textiles deposited with the dead attract collectors from all over the world.



Map 2: The area of study with the principal sites mentioned in the text

Nasca culture generally lacks monumental architecture, with only few sites presenting large platform mounts and massive adobe architecture. An exception is Cahuachi in the Nasca Valley, a site exhibiting a scale of monumental architecture not known from other Nasca sites (Orefici/Drusini 2003; Silverman 1993; Strong 1957). The socio-political complexity of the Nasca culture can be roughly described as chiefdom level (Service 1977; Carneiro 1981). There is some disagreement among the scholars about the level of complexity: or it was a loose compound of small political units sharing a common religious system, or otherwise the socio-political integration would have reached a multi-valley level at some point of time (Carmichael 1988; Hecht 2004; Silverman 1993; Isla/Reindel 2005). This question is not crucial to the understanding of regional pottery chronology. However, the degree of stylistic variation between the different valleys could serve as an argument in this discussion.

The pottery and textile art are considered as having a religious background. The decoration can be roughly classed as geometric, naturalistic (humans, birds, animals, fish, plants), and mythical, depicting several anthropomorphic or zoomorphic creatures

that because of their supernatural characteristics are interpreted as mythical, without knowing their exact meaning (Proulx 2006: 198).

Archaeological Investigation at the Peruvian South Coast started in 1900 with the work of Max Uhle in Chincha and Ica. Uhle was the first to scientifically excavate Nasca burials. He recognized the distinctiveness of the style that he called *Proto-Nazca* (Uhle 1913, 1914). The term *Nasca-Style* had first been employed by Thomas Joyce (1912: 182) in his overview of South American Archaeology. Uhle's work initiated strong scientific interest in the archaeology of the Peruvian South Coast. The early scientific excavations concentrated on burials to obtain the appreciated pottery for museums (Mejía 2002; Carmichael 1988; Kroeber/Collier 1998; Mejía 1976; Ubbelohde Doering 1958). At the same time, the sudden demand for South Coast pottery, especially the Nasca style, by museums and private collectors in Peru, United States and Europe led to the destruction of many archaeological contexts through commercial looting.

The work of Uhle also initiated the interest for chronology. Uhle already distinguished two stylistic varieties of Nasca Pottery that he thought would have chronological significance (Uhle 1914). At the University of Berkeley, Alfred Kroeber, Anna Gayton, and William Strong analyzed and partly published the Uhle collections from Ica and Nasca (Kroeber/Strong 1924; Gayton/Kroeber 1927). They also presented a first systematic chronological study.

Field work continued very sporadically with some excavations at Cahuachi by William Strong (1957). These were the first excavations at a Nasca settlement site and provided the first stratigraphic information. In Nasca, Ica, and Acarí some surveys and small scale excavations had been conducted (Rowe 1956; Menzel 1971; Robinson 1957, cited in Silverman and Proulx 2002).

The pottery typology proposed by Strong (1957) did not have a considerable impact, neither did Kroeber's revision of his earlier sequence (Kroeber 1956), because at the same time John Rowe and his scholars started working on a chronological master sequence for Peruvian archaeology. The idea was to establish a thorough relative sequence for the Ica valley that could be stylistically compared to sequences from other regions. This master sequence still serves as the backbone of chronology in Peruvian archaeology. The work is based upon Uhle's pioneering chronological studies (Rowe 1954; Uhle 1913) and consists of a framework of horizon styles that are distributed over wide parts of the central Andes, and Intermediate Periods, characterized by a more regional development of style (Table 1). Within this master sequence, the definition of the Early Intermediate Period corresponds to the relative time span encompassed by the Nasca style. The chronological subdivision of Nasca style in nine epochs (Nasca 1-9) is based on a seriation of Nasca pottery from Ica and Nasca by Lawrence Dawson (Rowe 1960).

In the 1980s, a growing interest in Nasca archaeology led to several archaeological projects. Some survey projects were conducted in the region to provide settlement pattern data for the valleys of Ica (Massey 1986), Palpa (Browne 1992), Ingenio (Silverman 2002b), and Nasca (Schreiber/Lancho Rojas 1995, 2003). At Acarí, research of the 1950s expedition was continued (Kent/Kowta 1994, Riddell/Valdez 1988; Valdez 2009), Donald Proulx (1999) surveyed parts of the Monte Grande Basin, and Patrick Carmichael (1991, cited in Silverman/Proulx 2002) prospected the shore line.

Period	Ica/Nasca Sequence	Palpa Sequence
Late Horizon (LH)	Inca	Inca, LIP
Late Intermediate Period (LIP)	Ica 1-10	LIP
Middle Horizon (MH)	MH 1B-4	undefined
	Nasca 9	Loro/Chakipampa
Early Intermediate Period (EIP)	Nasca 8	
	Nasca 7	Late Nasca
	Nasca 6	*Transition*
	Nasca 5	Middle Nasca
	Nasca 4	
	Nasca 3	Early Nasca
	Nasca 2	*Transition*
	Nasca 1	Initial Nasca
Early Horizon	Ocucaje 1-10	Ocucaje (Early, Middle, Late)

Table 1: The Early Intermediate Period within the Master Sequence of Peruvian Archaeology (after Rowe 1967), and its correlation with the Palpa sequence.

At Cahuachi, a major project under the direction of Giuseppe Orefici has been investigating the central monumental sector of the site for the last 25 years. Work has been carried on until the present with relatively little published data (Llanos 2007; Orefici 1993, Orefici/Drusini 2003). Helaine Silverman (1986, 1993) also excavated at Cahuachi with the aim of determining the function of the site, often referred to as an urban centre. Her excavations did not yield any information as to confirm the urban character of Cahuachi and she argues for a principally ceremonial function instead of a residential one. Her work initiated a discussion about the complexity of Nasca Culture. Patrick Carmichael (1988) addressed this question through an analysis of Nasca burials. Kevin Vaughn (2000; 2009) led an investigation focusing on household archaeology at a minor settlement site, at Marcaya, Tierras Blancas valley.
Since 1997 the Archaeological Project Palpa has been investigating the Palpa area. Initially, the research focused upon the relation between geoglyphs and settlements (Reindel/Isla/Koschmieder 1999; Reindel/Isla 2001). The long duration of the project permitted the study of different sites of all epochs, thus providing an excellent database for the Palpa area.

Research problem and purpose of the study

About 100 years of fieldwork in the region helped to roughly reconstruct the cultural history of Nasca culture, but investigations could only shed light on a small part of Nasca culture; most remains unknown. New investigations help to better understand some aspects, but even more questions arise from the new data. Such is the case with

chronology. The Dawson sequence had long been accepted as providing a very detailed sequence that seemed to fit the archaeological context. But, in recent times, while applying the sequence to new field data, the **need for an independent revision of Nasca chronology** became apparent (Hecht 2009; Orefici/Drusini 2003; Proulx 2006; Reindel et al. in press; Silverman 1993; Silverman/Proulx 2002). There are three factors demanding this:

1) Uniform linear sequence or regional heterogeneity of style?
The Nasca sequence is thought to function as a uniform linear sequence without major regional differences, at least in the valleys of Ica and Nasca. This is implied by the fact that the sequence is based on materials from both valleys, with the data from Nasca substituting parts of the sequence not observed at Ica. By this, significant regional differences in the pottery style had been denied. But, in surveys, phases Nasca 2, Nasca 4 and Nasca 6 are often underrepresented. This evidence could well be an indicator of regional differences. A drastic population decrease, as proposed by Browne (1992) and Silverman (2002b) is not plausible because it would repeatedly be followed by drastic increases to reach the population peaks of phases Nasca 3, Nasca 5 and Nasca 7. While settlements and ^{14}C dates indicate a steady population throughout the Nasca time, the absence of certain stylistic variations of pottery can easily be explained by regional differences and by the partial contemporaneity of stylistic variations.

2) Stylistic sequence and stratigraphic superposition
The Dawson Sequence is principally based on stylistic seriation and association of objects in funeral contexts. Only very few settlement contexts could be taken into account because of the lack of appropriate field data. Dawson was aware of the use of the observation of units of contemporaneity (burials) in order to check the temporal relevance of the stylistic changes. But, the argument of stratigraphic superposition, as observable in stratified deposits in settlement contexts, could not be sufficiently considered. It has to be checked to what degree the argument of direct chronological superposition can reveal different chronological results than the study of burial association. The congruency of burial sequence and settlement sequence has to be tested. Should there be differences, then a sequence based on settlement data is of more use to archaeological fieldwork, in dating settlement contexts.

3) Fragmentary presentation of the sequence
A final reason to present an independent pottery sequence for the Palpa area is the fact that Dawson did not publish his data. The sequence has been published only in parts (cf. Proulx 2006), hindering the understanding of a shift from one stylistic phase to another.

As a consequence of these weak points in the Dawson sequence, an independent chronological analysis is required in order to put the validity of the Dawson sequence to the test.
Now, with the Nasca pottery from Palpa such an analysis is possible. The past 13 years of intensive fieldwork by the Archaeological Project Nasca-Palpa in the valleys of Palpa have provided abundant pottery suitable for chronological analysis. The contexts from Palpa represent the first regional homogeneous sample comprising the complete sequence of Nasca cultural development. This sequence is completely exemplified by

pottery from settlement contexts providing, not only information upon the contemporaneity of elements, but also of stratigraphic superposition. This stratigraphic evidence will be discussed throughout the present study. The principal **objectives of this study** are:

- to systematically present a regional corpus of about 5000 fragments of Nasca pottery (shape, decoration and technical aspects of manufacturing)
- to establish an independent pottery sequence based on stratigraphic analysis
- to test the validity of the Dawson Seriation for the Palpa area through comparison with the new Palpa sequence
- to define the correlation between the Palpa sequence and Dawson sequence
- to define, on the basis of this study, the further requirements for the analysis of Nasca-ceramics from other valleys

The result of the study will be a regional sequence of Nasca pottery from Palpa. This will be the first complete sequence of Nasca pottery based entirely on pottery from archaeologically documented contexts of a geographically restricted area. This regional focus of the present approach has an important impact on the socio-political interpretation of Nasca culture: During the past, in the interpretation of Nasca culture and pottery style, the homogenous aspects of cultural elements were stressed. As a consequence Nasca culture appeared to be a homogeneous block that could be easily differentiated from other contemporary cultures. But, the cultural and socio-political developments and interdependencies within this multi-valley culture still remain unknown. The regional perspective has been widely neglected. Only (Proulx 1968) provides a regional comparison of Nasca 3 and 4 pottery from Nasca and Ica and Blagg (1975) discusses some obvious variations in Nasca 5 pottery, but without knowing the regional background. The cultural implications of these differences have not been systematically investigated. Pottery classification and chronology, the principal tools of investigation, were established on a multi-valley basis and are not suited for detecting details of specific regional development. As a result, the homogeneity of style seemed to be confirmed: of all phases of the complex style at least some elements have been found in all valleys.
In contrast, through the reconnaissance of regional sequences in pottery a systematic spatial mapping of pottery traits will be possible and regional differences can be defined. By comparison of various regional sequences it will be possible to trace the directions of development, centers of innovation, cultural dependencies and political and religious units. With a cultural interpretation based on several regional sequences a more dynamic picture of cultural development can be drawn. The documentation of a regional sequence for the Palpa area is a first contribution to this endeavor.

Study outline
Section A is about the history of research on Nasca pottery. It is an introduction into previous approaches to the classification and chronological ordering of Nasca pottery. A major part is dedicated to the Dawson sequence, as this is the sequence currently in use and therefore the starting point of the present investigation. But first, other studies will be briefly presented, because of their importance within the history of research and in order to see if there are concepts of classification that could be useful for this study.

Section B is about the classification of the Nasca pottery from Palpa. First, the method of pottery analysis applied in this study is presented. Then the shapes, decorations and fabrics are catalogued and discussed. The shapes and decorations are illustrated in a systematic order (Plates 1-136; I.1-54; II.1-11).
Section C includes the chronological discussion of the pottery from Palpa. First the stratigraphy is discussed and the Palpa sequence is defined. Then the numerical chronology is presented in light of the detailed analysis of stratigraphies. Finally the relationship between the Palpa sequence and the Dawson sequence is analyzed by searching evidence of each Dawson phase within the Palpa sample. In this context the regional distribution of Dawson phases in the neighboring valleys is documented.

A Nasca-pottery: previous research

During the past 100 years, there have been several approaches to the analysis of Nasca pottery. The studies differ in their focus of research and in the methodology applied. Only some of these studies have aimed at establishing a chronology of Nasca pottery. Others have relied on existing chronological frameworks and concentrated on classification of shapes and decoration, to classify a certain pottery collection or to describe fragmented pottery from excavations in settlements. In some studies the technical aspects of pottery construction were specifically observed, while some researchers studied the iconography and by this added to the classification of decoration.

This section provides an overview of the pottery related studies in Nasca archaeology. Most of the studies presented here have some kind of influence on the analysis of the Palpa pottery and therefore it is necessary to briefly sketch them all. Some studies include interesting concepts of classification that might be applied in the methodology of the present study (Section B). One approach – the Dawson sequence – is of particular interest because it is the classification and chronology currently in use. The Dawson sequence is therefore presented and critically assessed in some more detail, including an overview of Dawson's phase definitions in terms of shape and decoration. At the end of this section the methodological influence of the different approaches on the present study can be defined.

A.1 Chronology and general classification

Some researchers addressed the problem of chronology (Uhle 1913; Tello 1917; Gayton/Kroeber 1927; Bird, cited in Rowe 1960; Kroeber 1956; Strong 1957; Dawson, cited in Rowe 1960; Sawyer 1966; Kroeber/Collier 1998). However, of these attempts only the works of Kroeber (Gayton/Kroeber 1927; Kroeber 1956; Kroeber/Collier 1998); Strong (1957) and Dawson (Rowe 1960) are based on a formal analysis of a representative sample of Nasca ceramics. They include classifications of shape and design. The remaining studies represent interesting steps in the history of research, but they appear as intuitive schemes, for the lack of a systematic derivation.

A.1.1 Max Uhle

Max Uhle was the discoverer of the Nasca style. At the time he started archaeological fieldwork in Peru, the characteristic polychrome pottery type that later became known as the Nasca-style, was principally unknown, with exception of four examples of this pottery that Adolf Bastian showed to Uhle while both were working at the *Berliner Museum für Völkerkunde*. They regarded this pottery as "*the key that would reveal to us relations between ancient Mexico and ancient Peru*" (Uhle 1914: 3). This was the motivation why in September 1900 Uhle decided to continue his research on the Peruvian south coast, to search for the provenience of this interesting style.

He unearthed 32 Nasca burials at Ocucaje in Ica, made a surface collection of sherds at the Santiago site in Ica and later in 1905 purchased a large collection of Nasca pottery at Nasca (Gayton/Kroeber 1927; Kroeber 1956; Proulx 1968, 1970).

Uhle noted two varieties in this style. While he could observe the regional distribution of these varieties between the valleys of Chincha and Acarí, the chronological ordering could only be guessed at.

> "It is easy to distinguish certain varieties among specimens of pottery of the same culture. Some will show a greater variety of colors, others are plainer; some show severe outlines in their figure designs, while others are marked by a free and flowing treatment, which often degenerated into a mass of meaningless staff or arrow-like points and scrolls around the original nucleus of the design. It appears that those designs which are distinguishable by the more severe treatment of the figure ornament in union with the richest harmony of its coloring must be considered as representing the earlier type. This latter class up to now has come to our knowledge as produced exclusively by the valleys of Ica, Pisco, and Chincha, while in the articles coming from Palpa and Nasca the freer treatment seems to predominate." (Uhle 1914: 9)

Uhle correctly intuited the chronological order of the two varieties of Nasca-style, although he did not have any archaeological argument to support this assumption. The comments on the regional distribution seem to be due to sample bias.
These two varieties of the Nasca style were confirmed in later studies. Rowe (1960) denominated them as *Monumental* (the earlier, more severe type) and *Proliferous* (the later flowing and more ornamented type).

A.1.2 Julio C. Tello

Julio C. Tello, like Uhle, noticed the existence of two sub-styles that he called *Chanka* or *Proto-Nasca* and *Nasca Clásico*. The first corresponds widely to the proliferous strain while the definition of his Nasca Clásico best fits the monumental variety. He tried a chronological ordering of these styles based on the archaeological context. Tello deduced this chronological ordering of the Nasca sub-styles from the preservation conditions of the associated organic materials. Obviously, the argument is not valid and Tello's conclusion was incorrect: According to Tello (1917), the Monumental variety would be the more recent one, the Proliferous the earlier variety. Regardless his erroneous assumptions it is important to be aware of the inverted chronology and to know the specific terminology applied by Tello, as this is used throughout his field notes. Tello and his assistant Mejia excavated 284 burials in the region (Tello 1959; Mejía 2002), many of which remain unpublished.

A.1.3 Alfred Kroeber

Alfred Kroeber is one of the most important researchers in Nasca archaeology. He was concerned with the chronology of Nasca pottery for nearly 40 years. After initial contact with the material while editing the Uhle collections housed at the Phoebe Hearst Museum at Berkeley (Kroeber/Strong 1924; Gayton/Kroeber 1927), he headed for fieldwork to the Nasca region with an expedition by the Field Museum of Chicago. Later, he revised his earlier studies (Kroeber 1956) and prepared a publication of his excavations that would be published posthumous (Kroeber/Collier 1998) because of Kroeber's death in 1960. The three publications (Gayton/Kroeber 1927; Kroeber 1956;

Kroeber/Collier 1998) show the process of developing a Nasca pottery sequence. As a consequence of the delay in the final publication and the quality of the Dawson seriation elaborated at the same time, Kroeber's approach played a minor role in later research. However, it is to be remembered that it is the only complete sequence which has been published up to now and in its final version it is based on a regional sample of pottery from known contexts (Carmichael 1998: 20). Therefore it will be compared to the Palpa pottery later in this study.

A.1.3.1 Gayton and Kroeber 1927

Gayton and Kroeber presented the first formal analysis of Nasca pottery. It is a quantitative seriation of shape, color and design, with the number of correlations between these traits being the criterion for defining substyles in the Nasca style.
The corpus for the analysis is the Uhle pottery collection from Nasca. In 1905 Uhle purchased at Nasca 657 vessels from grave robbers. Burial associations are known only for 13 vessels from two burials. In some cases, site provenience had been documented by Uhle. As a consequence, the sample can only be analyzed by stylistic means.
The work aimed in the first instance at a definition of style. However, a chronological interpretation of the sequence of the styles had been intended from the beginning (Gayton/Kroeber 1927: 3). The starting point of this study is the recognition of the existence of at least two substyles of Nasca pottery (Uhle 1914).
The method employed by Gayton and Kroeber is a simple statistic of correlation of shape and design traits and of shape and colors. The idea is that an exclusive or nearly exclusive combination of several shapes with several designs or colors would serve as definition for a substyle. While a homogenous style shares technical characteristics of the pottery as well as a canon of shapes and design traits, substyles can be expected to differ in some of these aspects. Nasca pottery is generally characterized by the employment of polychrome engobe painting. However, shapes and design traits exist in some variety and could be used to define substyles.

The analysis proceeded first establishing 25 shape classes (Gayton/Kroeber 1927: Fig. 2); then they checked the correlation of these with 40 defined design traits (Gayton/Kroeber 1927: Fig. 3), and with nine colors. The shape classification was their own, while the definition of design traits was based on Seler's (1923) iconographic analysis (Kroeber 1956: 327).
The number of correlations was tabulated in a cross-table (Gayton/Kroeber 1927: Tables 1, 2). Gayton and Kroeber (1927:10) present the result as a characteristic correlation of shape and design traits, with one group of design traits being nearly exclusively associated with one group of shape classes, while a second group of design traits was associated with another group of shape classes. An additional third group shared shapes and design traits with the two other groups, therefore they considered it as an intermediate phase. On the basis of these trait correlations they defined the substyles A and B and an intermediate style X. Vessels that did not fit well into this scheme or that showed a similitude with the Tiwanako style, were classed as style Y.
The analysis was further tested on a second sample, coming from Uhle's Ocucaje excavations which consisted of 115 vessels from the 32 burials excavated. This test confirmed the former distinction of substyles as it shows a strong correlation of Nasca

A shapes and traits with nearly all of the vessels from the Ocucaje cemeteries, a restricted location, belonging to sub-style A.
Gayton and Kroeber present a full description of the defined substyles with the shapes and designs in discussion completely depicted. The tabulations that serve for the definition of substyles are presented. Additionally they present some plates with photos from the Uhle collection.
In the chronological interpretation of their analysis Gayton and Kroeber are cautious in explaining that

> "[t]he lack of stratigraphic proof or even of local and burial provenience leaves the chronological relationship of styles A and B undeterminable by evidence other than inherent stylistic features. An interpretation of stylistic traits, unsupported by extraneous proof is not a reliable basis on which to build a chronology." (Gayton/Kroeber 1927:19)

Later, John Rowe (1960: 29) resumed this critique so as to stress the advantages of the Dawson sequence. In Kroeber's approach, and equally in those of Uhle, Tello, and Bird, the chronological order of the defined substyles still required independent proof by linking it to a known sequence.
Anyway, the sequence did not have any considerable impact. The problem of Nasca chronology did not seem to be solved with the work presented by Gayton and Kroeber. Additional to Rowe's general remark upon the chronological validity of the sequence, there are some more deficiencies in the analysis.

The quantitative approach does not serve to establish a chronology (Proulx 2006: 26). There is not necessarily a chronological significance in a frequent correlation of one shape with one design; it could be a sign of contemporary substyles. On the other hand, the mere definition of substyles was not as successful as could have been. A revision of the graphic presentation of the seriation (Gayton/Kroeber 1927: Table 1) indicates that the phases are not clearly defined by correlation clusters.
Table 2 is adapted from Gayton and Kroeber (1927) demonstrates this lack of consistency:

	A designs 1-11	X designs 12-25	B designs 26-40
A shapes, A, E, F, H, U	47%	45%	8%
X shapes, B-D, G, P-T	19%	56%	25%
B shapes, I-O, V, Y	2%	46%	52%

Table 2: Percentage occurrence of designs and shapes grouped by substyles
(after Gayton/Kroeber 1927: 10).

The correlation of A shapes with A designs (47%) is nearly the same as its correlation with X designs (45%). The same is the case with characteristic B shapes that are correlated with nearly as many X designs (46%), as with B designs (52%). Finally, the shape correlation of the defined X designs is the same as with A, X, and B shapes (45%, 56%, and 46%). Consequently, there is no clear graphic or quantitative distinction of substyles A and X and B and X in this aspect. The only clear distinction is that of styles

A and B that had been intuitively known since Uhle (1914). But, the distinction is not clear cut, with the transitional style X comprising the largest quantity of vessels.
The difficulties with this seriation are obvious and so years later Kroeber (1956) himself presented a profound critic of his chronology.

A.1.3.2 Kroeber 1956

In 1956, Kroeber published a new attempt to bring chronological order to the Nasca style. The methodology is basically the same as in 1927, with major improvements made in two aspects. The first improvement is a more detailed shape classification. Kroeber noticed that in some cases of his 1927 analysis, a shape classified as Nasca A, would often occur with a Nasca X design. The result is a somewhat unclear definition of the phases. Now, the recognition of minor differences in shape ought to provide clearer style definitions.
A further weak point of his 1927 approach is the reduction of the rich iconography to a set of 40 design themes (Proulx 2006: 25). But in this case, Kroeber did not intend to improve it:

> I trust [this paper] will contribute to the widening and firming of the basic classification of Nazca ceramic shapes, which is one prerequisite for any precise understanding of the style and its course. The identification, classification, and validation of painted design features is at least equally important, but done systematically it will be a long job, and I leave it to other hands. (Kroeber 1956: 340)

The second aspect Kroeber paid more attention to in 1956 is the archaeological context. He states that it would have been better first to analyze the Uhle collection from Ocucaje, as these all have known burial associations (Kroeber 1956: 334), and later include the vessels without known context in the analysis. Additionally, in 1956 he disposed of a large amount of pottery from known burial contexts from his own excavations of the 1926 expedition, all from the Nasca area. Now, first he wanted to define style A on the basis of the Ocucaje burials and other burials excavated by himself at Cahuachi and Aja. He then proposes to order the remaining materials according to their similarity to style A (Kroeber 1956: 337).
But, the 1956 article only presents a revision of the earlier classification and some analysis of vessel proportions to improve the shape classification. The final publication of the complete sequence had been planned together with Donald Collier as a publication of the burial pottery from Kroeber's 1926 expedition. Due to Kroeber's sudden death this project was delayed for many years.

A.1.3.3 Kroeber and Collier 1998

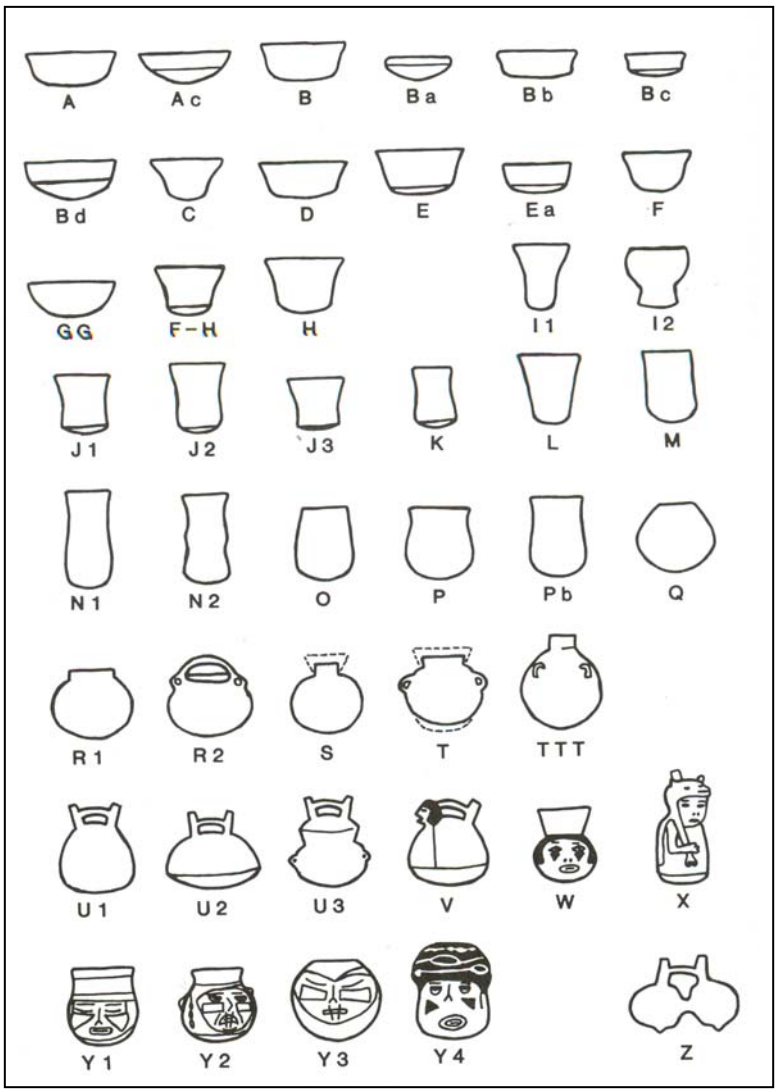
This posthumous publication, edited by Patrick Carmichael, shows the final arrangement of Nasca pottery as ideated by Kroeber. The underlying method is the quantitative approach of his earlier studies, but now combined with the observance of pottery association in burials. The classification of shapes and designs also goes back to his early works. Again, little attention was given to a classification of design traits. While presenting his burial data from Nasca Kroeber provides the first regional sequence of Nasca pottery, based on burial association.
The defined phases are *A0, A1, A2, B1, B2, Y1*, and *Y2* (Carmichael 1998: 20). This is basically the former A/B distinction. The transitional and weakly defined Style X was

eliminated by integrating the material to substyles A and B. This was achieved by a refinement of the shape classification. To account for the variety of Nasca style as reflected in the work of Lawrence Dawson, with whom Kroeber was in contact at the time working on this final version of this chronology, Kroeber divided the substyles in A1/2 and B1/2.

The result is a definition of style that serves to fit the data from about 100 burials from the Nasca valleys, with a few pieces, generally without context, that were considered as doubtful in their style assignation.

The details of the style definition and their chronological value will be discussed later, in comparison with the Dawson sequence and with the Palpa material.

In the final version of shape classification the number of formerly 26 shape classes (Gayton/Kroeber 1927) had been extended to 45 shape classes or shape types (**Fig. 1**):



A plate painted top and bottom
Ac interior-painted plate
B outside painted bowl
Ba-c low bowls
C flaring sided bowl
D flat bottom flaring bowl
E outside painted bowl
Ea medium height bowl
F high bowl
GG hemispherical bowl
F-H bowl
H high flaring bowl
I1-2 angled goblet
J1-3 waisted goblet
K double-convex goblet
L conical goblet
M tapering vase
N1 cylindrical vase
N2 cylindrical vase with bulging sides
O bulbous-convex vase
P/Pb bulbous-concave vase
Q lipless jar
R1 wide mouthed spherical jar
R2 wide mouthed spherical jar with lugs and handles
S small mouthed spherical jar
T two-handled jar
TTT three handled jar
U1 double sput jar, ox-heart shaped
U2 double spout jar, lenticular shape
U3 double spout jar capped jar shape
V head-and-spout jar
W flaring rim head jar
X figure jar
Y1 face jar
Y2 modified wide-mouthed jar with three faces
Y3 trophy head jar
Y4 head jar
Z miscellaneous shapes

Fig. 1: Nasca vessel shape categories (Kroeber/Collier 1998: Fig. 90)

The system is not explicitly hierarchically oriented as a taxonomic classification should be. The system is roughly organized by major shape categories:

Bowls (A-H)
Goblets (I-L)
Vases (M-P)
Jars (Q-Y)
Miscellaneous shapes (Z)

Due to Kroeber's 40 years experience with Nasca pottery the classification can be regarded as complete, representing the most important shape classes known in Nasca pottery, but there are too many inconsistencies as to serve as a classification:
The head jar categories are not morphologic but iconographic categories: the face jar (Y1) is a bulbous concave vase (P); the trophy head jar (Y3) is a lipless jar (Q).
Among the bowl categories there are some that seemingly have been defined according to the area of decoration like the *plate painted top and bottom* (A), *interior painted plate* (Ac), or *outside painted bowl* (B). Without further morphologic definition it is difficult to differentiate for example categories A, B and D. In other categories the distinction made is too fine as with the F-H distinction. A further critic is that some of the categories are contemporaneous variations while others have chronological significance. The overall development of shape is not articulated in this system (Silverman 1993: 229).

A.1.4 Junius Bird

Until the 1950's the scientific debate was concerned with the correct chronological ordering of the two substyles identified by Uhle. In this context, Junius Bird proposed the possibility of contemporaneity of the two substyles (Rowe 1960). Bird and Joy Mahler analyzed the Nasca-collection housed by the American Museum of Natural History. The context association of the vessels was completely unknown and Bird´s conclusion was that the two substyles might be contemporaneous. Just as with the chronological order proposed by Tello (1917), here the need for a methodologically valid argumentation for solving the chronological problem becomes obvious: without considering the archaeological context all logical possibilities of chronological ordering have to be considered. Finally, an analysis based solely on style is not enough, because there are no laws of stylistic development that could be applied.

A.1.5 Alan Sawyer

As director of the Washington Textile Museum, Alan Sawyer (1966) provides a collector's perspective on chronology. His sequence is reduced to the simple but clear scheme of

Nasca-Wari
Late Nasca
Middle Nasca
Early Nasca
Proto Nasca

Sawyer did not present a detailed analysis but only a short characterization of epochs, depicted with a few photos. He did not cite the sources for his distinctions made. Probably it was a synthesis of all earlier studies on Nasca pottery. The distinctions made resemble Kroeber's A-X-B or Dawson's Monumental – Transitional – Proliferous – Disjunctive (see Table 3, below, for a comparison of the different schemes). The major periods presented are widely accepted. However, Sawyer does not enter into details of overly fine phase distinctions. The exact definition of these periods remains unclear. It is mentioned here because the terminology had influence upon the study of Concepción Blasco and Luis Ramos (1980) and the chronological scheme used by the Palpa Project.

A.1.6 Concepción Blasco B. and Luis Ramos G.

Concepción Blasco and Luis Ramos (1980; 1986; 1991) remark the lack of a complete catalogue of Nasca ceramics, necessary for classifying museum collections. So they propose an own classification scheme for decoration and shape, based on nearly 1350 vessels from the *Museo de América* in Madrid. Their classification is not concerned with chronology; for chronological ordering they refer to the scheme of four phases proposed by Sawyer. Their study is of particular interest to the present analysis, because their shape classification has inspired others in their attempt to classify fragmented pottery (Silverman 1993:229).

Blasco and Ramos (1980: 241-242) define the following shape categories:

I. ***Platos***: Son recipientes abiertos, cuya altura es inferior a la mitad del diámetro de la boca.
II. ***Cuencos***: Se trata también de recipientes abiertos; su altura es siempre inferior al diámetro de la boca, pero éste nunca llega a ser el doble de la altura.
III. ***Vasos***: Son un tercer tipo de formas abiertas y están caracterizados por poseer una altura superior al diámetro de su boca.
IV. ***Jarras***: Son formas abiertas provistas de un estrechamiento que marca la diferenciación entre las dos partes que las componen: Cuello y cuerpo. Pueden estar o no provistas de asas laterales.
V. ***Botellas***: Son los recipients cerrados. En la alfarería nazca están caracterizados por poseer uno o dos picos y un asa cinta que sirve de puente en el caso de los recipientes con dos picos.
VI. ***Formas mixtas***: Son las de aquellos recipients que están realizados por la conjunción de dos formas diferentes, por lo que participan delas características de una y otra.
VII. ***Recipientes modelados***. Son aquellos que han sido concebidos y realizados como verdaderas esculturas de arcilla.

The Blasco and Ramos shape classification is convincing as it recognizes the limited repertoire of shape categories in Nasca-pottery, while below this first taxonomic level the varieties are manifold, maybe due to the fact that the vessels were hand made and thus individuals. The major shape categories are similar to those defined by Proulx (1968) and Roark (1965). But, within the Blasco and Ramos approach, all the shape definitions rest on shape characteristics and not on decoration. The shape definitions are simple and still they do not fail to define the main shape categories.

The subdivisions of these categories are based on a description of wall shape and orientation, and base shape (Shepard 1956). At this level every vessel can be classified and described. However, in one aspect the definition presented is not strict. The vases are defined as open vessels, but many shapes presented show insloping walls with a maximum diameter lying at the vessel body (Blasco/Ramos 1980: Tabla III, 1-2).

A chronological significance of the subcategories has obviously not been intended, but the occurrence of these shapes in each of the Nasca periods has been documented. For later comparison with the Palpa pottery it is important that Blasco and Ramos regard Nasca 3 and Nasca 4 as Early Nasca and Nasca 5 and 6 as Middle Nasca, thus a shape being characteristic of their Early Nasca could belong to Early or Middle Nasca in Palpa

Their classification of decoration defines a series of major design categories (Blasco/Ramos 1980) as are *motivos geometricos; motivos vegetales; animales naturalistas; la figura humana; cabezas cortadas; animales fantasticos; and personajes fantásticos.* Each of these categories has several subcategories. All the distinctions made are at the level of theme of the Dawson approach and similar to Seler (1923). The categories and creatures defined are nearly the same in all the approaches, confirming the soundness of this classification. A finer distinction at the feature level has not been intended by Blasco and Ramos. For a general interpretation of iconography the distinction is sufficient; for chronological analysis it is not.
The Blasco and Ramos approach was designed to catalogue a museum collection. However, it is not useful for chronological analysis. Especially in the classification of design it lacks the fine distinctions made possible by Dawson. It is the advantage of the Dawson classification that it is closely linked with the idea of seriation. It is based on the recognition of many single design features and makes the diachronic comparison of variations on the same theme possible.

A.2 Classification of fragmented pottery from excavations

There have been relatively few excavations in Nasca settlements. The classification of the typically fragmented pottery recovered when excavating this kind of evidence presents a special challenge to the excavators. It has been stated that the Dawson sequence is the system in use. This is true for dating the pottery. Fragments with a series of identifiable features can be easily dated, classifying them within the Dawson scheme. However, the vast majority of the encountered material does not serve for this purpose and still has to be classified, but the characteristics of the material require specific classification approaches.
These studies are especially valuable for the present analysis, because the authors dealt with fragmented pottery from excavations in settlements (Strong 1957; Silverman 1993 Vaughn 2000). Orefici and Drusini (2003:144) are also confronted with fragmented pottery and seemingly adopted Dawson's system, with some minor modification. But, because they neither present an own typology nor a catalogue of pottery from their excavations the work cannot be taken into account for the present study.

A.2.1 William Strong

Strong was the first to excavate in a Nasca settlement context, and he was the only one to intend a chronological ordering of Nasca pottery, based on fragmented pottery from excavations. During his 1952-53 Columbia University expedition he conducted some investigations at Cahuachi, digging altogether 9 test pits in supposedly domestic areas (Strong 1957: Fig. 4). The aim of the study was to determine the temporal relationship between Paracas and Nasca cultures. The test pits yielded abundant ceramic material which can be dated according to the Dawson sequence to phases Ocucaje 10 and Nasca 1-3 (Silverman 1993:43). Strong presents the data in a short inform (1957). A more detailed report was hindered by his death, but some discussion of his excavations is provided by Silverman (1993: 19, 26, 43-54). Despite being familiar to Kroeber's stylistic investigation, having published the Uhle pottery from Ica together (Kroeber/Strong 1924), Strong chose a typological approach for ordering of the Cahuachi findings. The characteristics of the pottery that have been typed, are color and surface finish, e.g. use of polychrome or monochrome engobe, polishing of the surface, incisions etc. This kind of typing was the standard method in American Archaeology at the time Strong worked at Cahuachi. In the Virú Valley Project, where he participated some years before, this type system has also been the method of choice (Strong/Evans 1952). However, in the case of the complex iconography of Nasca pottery a limitation of classification to color and surface treatment of the pottery means a severe loss of information. The focus of Strong's interest was the transition from Paracas to Nasca and the defined types can be regarded as useful to describe the pottery of this period as indeed there are several types present. But, with the beginning of Kroeber's Nasca A, which corresponds to Middle Nasca in Strong's terminology or Dawson's Nasca 3, there is merely one true type left, the *Nasca A Polychrome* type. The classification of design elements made by Dawson shows that there is more analytical potential in the Nasca style than for defining only one Nasca Polychrome type. Interestingly, through the work of Rowe, Dawson and Menzel and the impact their Master Sequence had in Peruvian archaeology, typology has been widely replaced by classifications of shape and design. Consequently, Strong's terminology of Nasca pottery types has not been further in use.

The test pits Strong excavated were dug in arbitrary artificial levels of 25 and 50 cm. For analysis of the materials he employed the type frequency Seriation (Ford 1962). Strong's methodology stands in the tradition of the Virú Valley project. Later, the reliability of this method has been questioned and the excavation by natural layers became the archaeological standard (Harris 1989. 19; Heizer 1959: 40-41). The threat of mixing of materials from different natural layers in this method is obvious. The methodological reliability of the type frequency seriation has also been criticized (Dunnell 1970). However, a general trend of development and superposition can be observed.
The typology presented by Strong (1957) comprises nine types. Two of these have been defined in analogy to Kroeber's Nasca A/B subdivision.

1) Cahuachi Polychrome Incised and Modeled Thin
2) Cahuachi Polychrome Incised Thick
3) Cahuachi Stylus Decorated

4) Cahuachi Polished Black Incised
5) Cahuachi Polychrome
6) Nasca A Polychrome
7) Cahuachi Broad Line Red and White
8) Cahuachi Broad Line Red, White, Black
9) Nasca B Polychrome

Additionally there are two types regarded by Strong as Late Paracas that now would be classed as Nasca 1 (Silverman 1993:43) these are the types

10) Cahuachi Negative
11) Cahuachi Red and White Decorated

The chronological scheme used by Strong consists of Proto Nazca, Early Nazca, Middle Nazca, and Late Nazca. It is to be noticed that his definition of these periods is different to the definition used in the Palpa Project (Table 3). The chronological distribution of types as presented by Strong (1957) is as follows: types 1-4 belong to the Proto-Nazca period. Types 5 and 7 are Early Nazca, types 6 and 8 are Middle Nazca and Type 9 is Late Nazca. Types 10 and 11 are also Proto-Nazca, instead of Late Paracas. The stratigraphic evidences from Cahuachi cover the sequence from Proto-Nasca to Middle Nasca (Silverman 1993:53).
Strong states that he did not find any Nasca X or AB pottery at Cahuachi or at other sites (Strong 1957: 28)

The results from Strong's analysis can easily be correlated with the phases of the Berkeley sequence. The types are clearly defined and served as a basis for Dawson's definition of Nasca phases 1-3 (Rosselló Truel 1960: 65).

<table>
<tr><th>Kroeber/Collier 1998</th><th>Strong 1957</th><th>Sawyer 1966</th><th>Dawson n.d.</th><th>Blagg 1975</th><th>Palpa Project 1997-2010</th></tr>
<tr><td>Nasca Y 1/2</td><td>Huaca del Loro</td><td>Nasca Wari</td><td>Nasca 8</td><td>Disjunctive</td><td>Loro</td></tr>
<tr><td rowspan="2">Nasca B 2</td><td rowspan="3">Late Nasca</td><td rowspan="2">Late Nasca</td><td>Nasca 7</td><td rowspan="2">Proliferous</td><td rowspan="2">Late Nasca</td></tr>
<tr><td>Nasca 6</td></tr>
<tr><td>Nasca B 1</td><td>Middle Nasca</td><td>Nasca 5</td><td>Bizarre
Progressive
Conservative</td><td rowspan="2">Middle Nasca</td></tr>
<tr><td rowspan="3">Nasca A 2

Nasca A 1</td><td rowspan="2">Middle Nasca</td><td rowspan="3">Early Nasca</td><td>Nasca 4</td><td rowspan="3">Monumental</td></tr>
<tr><td>Nasca 3</td><td rowspan="2">Early Nasca</td></tr>
<tr><td>Early Nasca</td><td>Nasca 2</td></tr>
<tr><td>Nasca A 0</td><td>Proto-Nasca</td><td>Proto Nasca</td><td>Nasca 1</td><td></td><td>Initial Nasca</td></tr>
</table>

Table 3: Comparative scheme of Nasca sequences

A.2.2 Helaine Silverman

In her excavation at Cahuachi Silverman faced the problem of dating fragmented pottery with the Dawson scheme; the problems have been explained above. Silverman (1993) applies a simpler classification scheme that she characterizes as a mixture of

Blasco and Ramos (1980) and Proulx (1968). Silverman (1993:229) states that her scheme would be "*better suited to the problems of working with sherd material than Proulx's which creates fine discriminations based on preserved wall height, basal angles, or shape of base. These are attributes that are frequently absent on small, broken pieces of pottery*."

The basic shapes defined by Silverman are:

Double-spout-and-bridge bottles
Bowls
Cup bowls
Dishes
Vases
Collared jars
Basket vessels
Modeled vessels
Composite forms
Musical instruments
Undecorated and/or utilitarian vessels

Together with this rough classification she applies a fineware-plainware dichotomy.
As her shape classification is used for functional interpretations only, such a rough distinction is useful. She did not intent to establish an independent sequence or to test Dawson's sequence with her excavation data. Dating of the material is apparently based on the most diagnostic materials, which could be correlated with the Dawson sequence.
It is interesting to notice that the acceptance of the Dawson seriation ends after having dated the most diagnostic sherds. The result is the coexistence of two systems: Shapes are defined in a very general system. The dating of the material is done in an independent step by comparing some well preserved fragments to the Dawson sequence.

A.2.3 Kevin Vaughn

Kevin Vaughn directed excavations at Marcaya, a Nasca 3D-4 (Proulx 1968) related domestic site in the Tierras Blancas Valley. Vaughn (2000) applies the reduced classification scheme developed by Silverman, but with some further modifications. As he remarks, while dealing with fragmented pottery the only information available is often the upper vessel part (Vaughn 2000: 290). Many fine distinctions made in classification of complete pottery can not be made. He defines five pottery categories and some subcategories, all without chronological significance (Fig. 2):

Bowls:	Flaring bowl, cup bowl, convex bowl, straight sided bowl, very deep bottom bowl, other
Dishes	
Vases	Bulbous
Jars	Collared, Head, Cantaros
Other	Bottle, Indistinct

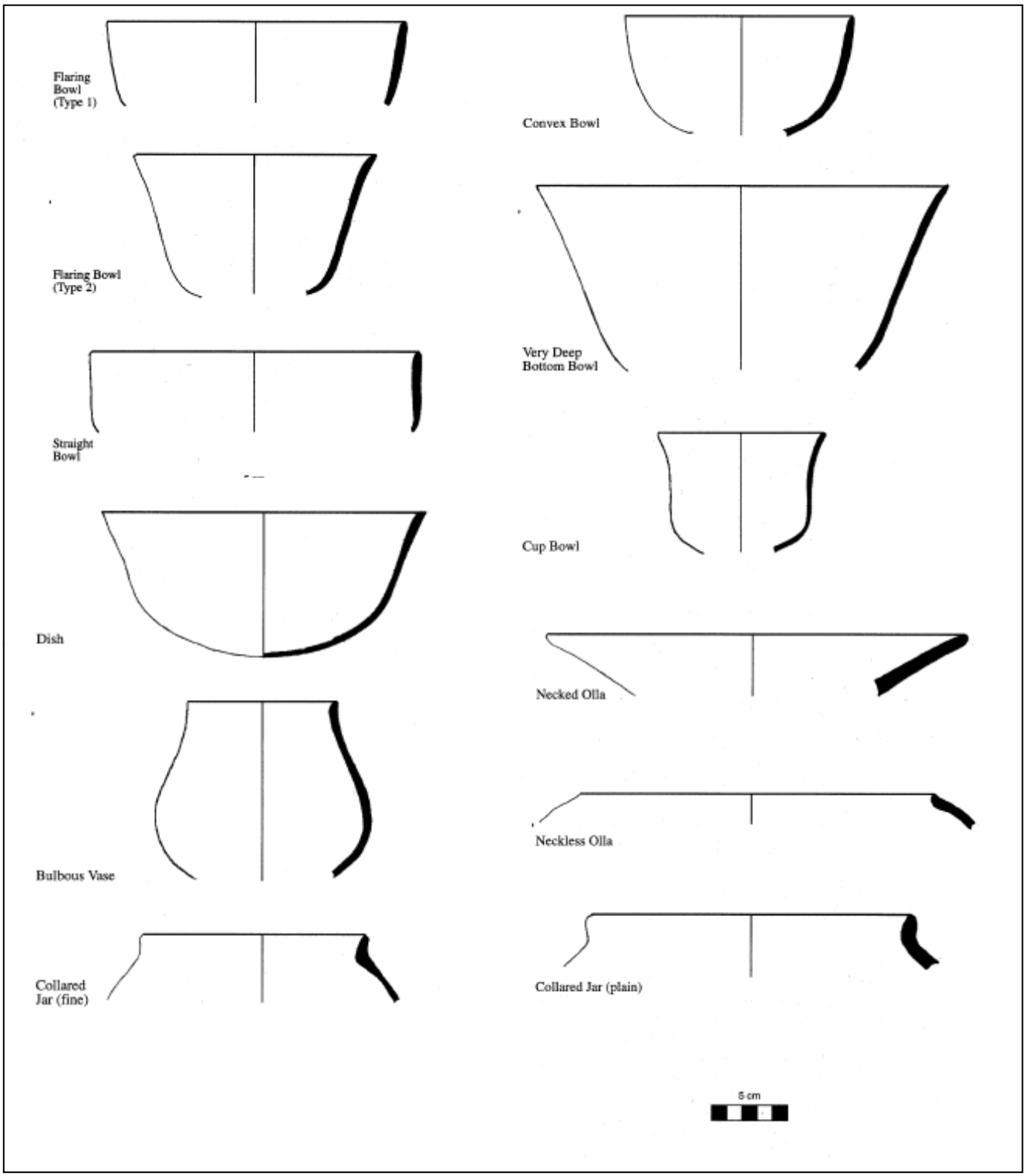


Fig. 2: Nasca vessel shape categories (Vaughn 2000: Fig. 6.2)

Vaughn (2000: 298) correctly observes that the remaining three sub-classes [of bowls] in Proulx's analysis are defined more by their bases than their walls. Because the assemblage at Marcaya consisted mostly of body sherds, and bases were rarely present, subclasses derived from wall form were created. Convex bowls are bowls with convex walls (without flare), while straight sided bowls have straight, vertical walls with no curvature.

Additionally he differentiates some plainware shapes:

Ollas	necked, neckless
Jars	collared
Handles	
Other	bottle, indistinct

He provides some illustrations of the ideal types of vessel shapes (Fig. 2); however, he fails to define the limitations between these shapes. Variations in Nasca pottery float between shape categories, for example his Flaring Bowl type 2 is similar to the Very deep bottom bowl, only with some difference in scale. The Cup bowl is also very similar, with walls less flaring and smaller. The pottery from his excavations is illustrated in a catalogue Vaughn (2000: Fig. 6.3-6.17).

The dating process is the same as Silverman's. Vaughn (2000:287) sees a "solid chronological framework" provided by the Dawson sequence accessible through Proulx's (1968) study of Nasca 3 and 4 pottery. Chronological subdivision has been based on shape and design (Vaughn 2000: 361-364).
Vaughn's primary concern is to contribute to the knowledge of domestic pottery, the composition of a domestic pottery assemblage, place of production and other related questions.

It has to be assessed while analyzing the Palpa pottery, to what degree chronological differences can be traced by a detailed description of pottery shape.
The results of the pottery analysis from Marcaya are of special interest to the discussion later in this study, because here apparently a case of transition from Nasca 3 to Nasca 4 has been documented.

A.3 Iconographic studies

The attractive and complex decoration of Nasca pottery resulted in a series of purely iconographical studies. These do not have direct influence on the discussion of chronology, but as some of these studies influenced the classification of design, the most important will be shortly introduced here.
The earliest systematic attempt to the understanding of Nasca iconography is the one presented by Seler (1923). He studied a large collection of Nasca pottery from the Berliner Museum für Völkerkunde, from the Staatliches Museum für Völkerkunde München, and from the private Gaffron collection. Seler presents a large catalogue of iconographic themes, defining several mythical beings, as well as naturalistic and geometric designs. His definition of iconographic themes influenced to a great degree the definitions of the Dawson seriation. Even the terminology was in some cases just

translated into English. Also Kroeber (Gayton/Kroeber 1927) based his iconographic analysis on Seler's classification.
Other iconographic studies equally serve as a good source for understanding Nasca iconography. Due to the scarcity of published illustrations within the studies related to the Dawson sequence it is necessary to consult these iconographic studies (Clados 2001; Golte 2003; Schlesier 1959; Ubbelohde Doering 1925/26, 1931; Yacovleff 1931, 1932a, 1932b, 1933).
Proulx (2006) presents a catalogue of Nasca Iconography. His classification is in the tradition of the Dawson approach and therefore it is an invaluable additional source for the reconstruction of the Dawson sequence. Unfortunately Proulx has not been able to include as many illustrations as he has liked into his study. Therefore, still the iconographic information will have to be searched for in a multitude of publications.

A.4 Research on techniques of Nasca pottery construction

The research on pottery construction, i.e. the technical aspects of pottery production has been widely excluded from the main chronological approaches. Still some authors published their observations on this aspect, but without finding any chronological significance. (Carmichael 1986; 1994a; Blasco/Ramos 1980; Proulx 1968; Vaughn 2000).

A.4.1 Construction technique

Patrick Carmichael (1986) submitted a sample of 30 vessels of different shapes from different phases (majorly N3-5) to a radiographic analysis. Different construction techniques cause different X-ray images. All indicates that the pottery was hand made. The primary construction methods used were coiling, drawing and direct shaping, with the last used only on a few occasions. According to Carmichaels study paddling is a secondary shaping technique used to thin walls, in order to consolidate the matrix, bond joins, and provide form. The vessel base has been directly shaped. The use of a pottery wheel (Gottsmann/Tellenbach 2002) seems improbable, as shown by Carmichael's analysis (1986, 1991) and an analysis of vessel symmetry, based on 3D modeling (Mara/Hecht 2005).
The engobe is made of mineral pigments with a fine ceramic slip. It has been applied to the smoothed leather dry surface of the vessel before burning. Generally the slip has been polished, sometimes burnishing it to a fine luster. On early vessels often the traces of polish can be seen on the surface. Sometimes the thick engobe shows characteristic crackling on these early specimens. Within phase Nasca 3 the technique has been perfected.

A.4.2 Macroscopic analysis

The general agree is that Nasca pottery is characterized by a fine paste with small to none inclusions of temper. Firing is normally in an oxidizing atmosphere. In Nasca 1/Proto-Nasca there is some quantity of reduced ware. The technical skills have been fully developed by the end of Early Nasca or Nasca 3. In the preceding Proto Nasca, Nasca 2 and early Nasca 3 some cases of irregular burning are known. Macroscopically

the paste is uniform; differences in color seem to be due to differences in the burning atmosphere.
The major technological distinction is a fineware – coarse ware dichotomy. Some vessels show a fine paste with little to none temper inclusions. The shapes of this *fineware* are characterized by thin walls, les than 6 mm thick, averaging 4 mm. Most of these vessels are decorated with a characteristic fine engobe. Among the early pieces some might have a polished surface only. In every case they differ markedly from the *coarseware* that has large temper inclusions and is often less compact. This fabric is generally found on large vessel shapes like jars. Thickness of the wall is often about 10 mm or more. Typically this coarse ware is undecorated. Some vessels show traces of burning, suggesting a use as cooking vessel.

Several authors prefer the term plain ware instead of coarse ware (Vaughn 2000, Silverman 1993). However, plainware can have a fine fabric. Also plain body sherds of decorated fineware would be classed in the plainware category.
Vaughn (2000: 291) includes the decorated coarse ware in the fineware category and thus causes some confusion within his classification of fabrics.

A.4.3 Chemical analysis

Composition analysis has been made in recent years on samples from Marcaya (Vaughn 2000; Vaughn/Neff 2000). A number of 100 pottery fragments were analyzed by instrumental neutron activation analysis (INAA). The first step has been a macroscopic analysis that led to the definition of three paste types (A-C) based on color as well as size and frequency of inclusions: Paste type A belongs to coarse utilitarian vessels with large inclusions and a brownish color, all undecorated; paste type B are equally utilitarian vessels with large inclusions, paste color is pinkish gray; the type includes some large painted but unslipped jars; paste type C is a fine paste, nearly without inclusions. All Nasca decorated fineware and 1 plain Proto-Nasca bowl fall into this category (Vaughn/Neff 2000:82). Samples from all these paste groups were submitted to INAA.
The statistical analysis of the results from INAA "*produced three groups of chemically distinct pottery and fourteen unassigned specimens*" (Vaughn 2000:372). These groups were compared with the priory defined paste types. The results are seen in Table 4. As 100 specimens have been submitted the percentage number is equivalent to the number of specimens. Most of the specimens (67%) belong to the INAA group 1. Interestingly, nearly all of the fineware specimens from paste type C and nearly all of the plainware 2 specimens of type B are included in this group. On the contrary, plainware 1 has a distinct chemical composition, most specimens falling in INAA group 2.
It is probable that plainware 2 and fineware pottery had been manufactured from clay sharing the same chemical characteristics and possibly stemming from the same source. For Plainware 1 distinct clay had been used.

INAA groups (%)					
Paste	1	2	3	Unassigned	Total %
A (Plainware 1)	1	15	4	8	28
B (Plainware 2)	22	0	0	1	23
C (Fineware)	44	0	0	5	49
Total	67	15	4	14	100

Table 4: Chemical analysis of pottery from Marcaya (after Vaughn/Neff 2000: Table 5)

A later study with pottery samples from other parts of the Nasca drainage confirmed that Nasca fineware pottery had been manufactured from chemically homogenous clay. Vaughn et al. (2006) interpret this situation as an indication of a centralized production of Nasca fineware. This is supported by the complex but standardized iconography and the equally standardized shapes. On the other hand, it is possible that potters preferred clay of a certain characteristic for making fineware and that this clay had been accessible in large parts of the geologically homogenous Nasca drainage. Further comparative studies are needed to test their hypothesis.
An analysis of x-ray fluorescence (XRF) on a sample of 27 fragments from Palpa will be included in the present study (see below). For further comparison it is planned to submit the same sample to INAA.

A.5 The Dawson Sequence

The Dawson seriation is actually the most thorough attempt at classification and chronological ordering of Nasca pottery. For this reason the scheme became the one to be used by most researchers in the region. Within the Archaeological Project Palpa it was applied to the classification of the pottery findings. The chronological value of the Dawson phases for the Palpa area and for the Nasca region in general is the subject of this study. The Dawson Sequence will be presented here in some more detail because of its significance as a classification scheme and because it is the system currently in use by most researchers. First the method applied by Dawson will be explained. Then a short summary of Dawson's Nasca phases will be provided, as far as it can be reconstructed from the available literature. Finally, the problems inherent in this sequence will be critically assessed.

A.5.1 Method of seriation

Based on the method of similiary seriation (Rowe 1961), Dawson arranged the Nasca pottery in a stylistic sequence, which he further subdivided into nine successive phases, denominated as Nasca 1-9. The sequence serves as a basis for the definition and chronological subdivision of the Early Intermediate Period of the master sequence (Table 1).
John Rowe (1956; 1960; 1961) explains the method of seriation. It is based on a corpus of considerable size: at the beginning of the project Dawson included some 1150 vessels in his study (Rowe 1960), during the project the corpus grew to about 3000 vessels. Donald Proulx (2006), one of Dawson's scholars, has continuously enlarged the corpus that already includes more than 6000 vessels. Of the initial 1150 vessels, about 600 vessels have known burial association (Carmichael 1988).

The main principle of the seriation is a method for stylistic analysis of artifacts borrowed from classical archaeology. The ordering of the artifacts is based on their stylistic similarity, a method known as similiary seriation. Rowe (1961: 328) gives an explanation of this "***method of ordering by continuity of features and variation in themes***", two complementary methods that sustain each other when applied together:

> *Ordering by continuity of features* rests on the assumption that the occurrence of features of style in time is not random, but that most features have a continuous span of existence. A feature is introduced, used for a while, and then dropped. […] In seriating on this assumption the objects or associated lots to be ordered are arranged in that sequence which provides continuous spans of existence for the largest number of features. (Rowe 1961: 328)
>
> In *ordering by variation in themes* the investigator selects some complex feature or theme which is found in several variations in the material he is studying, and he makes an arrangement of the variations in order of similarity with reference to the known extremes. (Rowe 1961: 328)
>
> In practice it is usually easier to make the original ordering by studying variations in themes and then to check it by charting the spans of existence of a substantial number of features. A minimum of 100 is recommended. (Rowe 1961: 329)

The method provides a perfect tool for stylistically tracing the variation and possible development of a design. The splitting of a complex design theme into features permits the description of even minute difference in the depiction of a theme. Basically it is a very fine classification of design. As such, it is very useful for an analysis of Nasca pottery. The rich iconography bears information that is accessible only through a fine classification. The quality of the Dawson approach as a classification scheme is one reason for its wide acceptance. The classification works even if the chronological sequence is rejected. By this, e.g. Nasca 4 pottery can be defined exactly, while its chronological position is still under discussion.
For classification the iconography is split up in smaller units (Roark 1965:15). The largest unit is the iconographic *theme*. This is defined as a recurring design, e.g. an animal, a bird, a mythical being, or a plant. Generally, a theme is composed of several smaller elements called *component.* This is defined as an interpretable iconographic unit, e.g. a mouth mask or a body part of a depicted figure. The *feature* is the smallest iconographic unit. It is a detail of depiction like the shape of an eye, the way of depicting a finger or a certain shape of a fruit. A component can consist of several features. Otherwise, sometimes components are stylistically reduced to a simple drawn line, like for example a hair hank; in these cases component and feature might be the same. Then again, it is possible that a component becomes a theme: for example trophy heads can appear as components of a theme or as an independent theme (Fig. 3).

The iconographic analysis, i.e., defining and describing comparable iconographic units, is the first step for seriation. The comparison and seriation of these units leads to the establishment of a stylistic sequence. However, this still lacks any chronological relevance, because there are no rules for stylistic development.

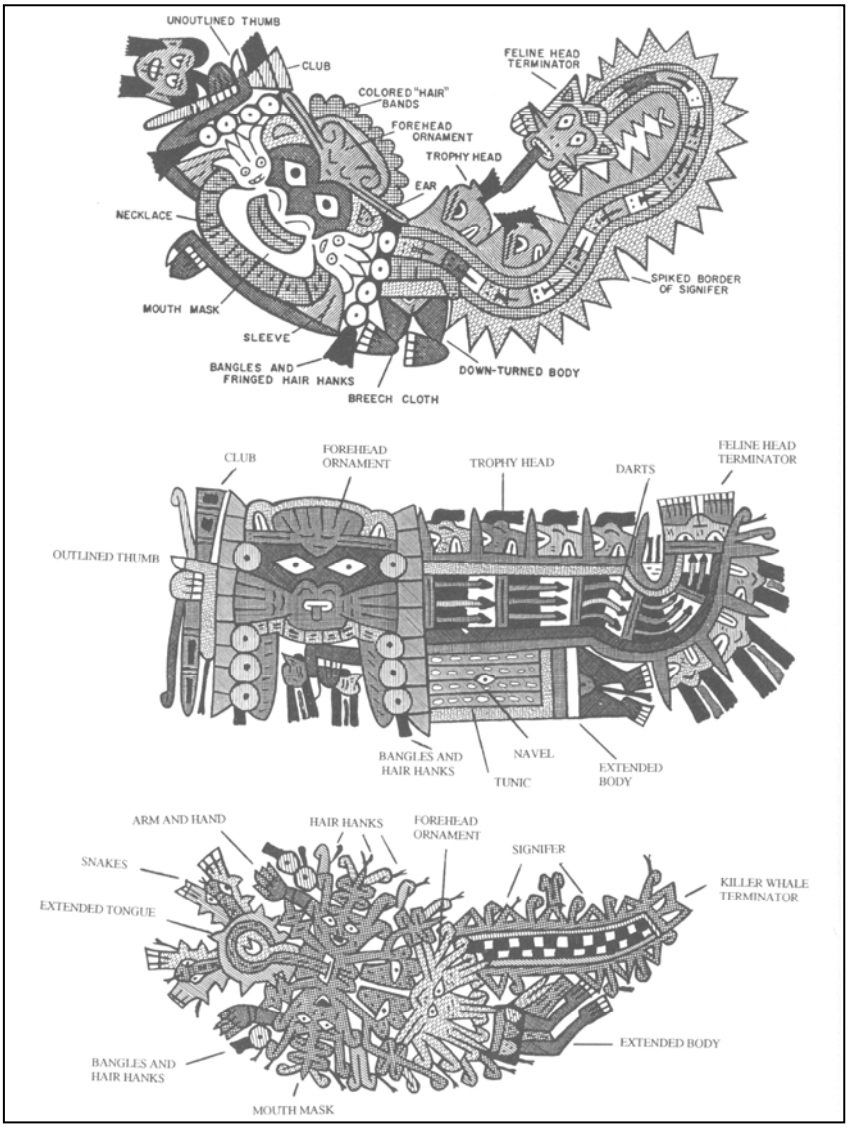


Fig. 3: The AMB theme and its components. Early Nasca, Middle Nasca and Late Nasca (after Proulx 1968: Figs 18-20)

Dawson's chronological ordering of Nasca-ceramics is mainly based on two arguments: The style, i.e., the analysis of stylistic *similarity,* according to which the vessels of the sample are seriated, and the observation of *association* of traits on one single vessel and in burials, which serve as units of contemporaneity. Dawson checked the stylistic seriation with the burial data from his sample. As all the vessels from one burial are expected to be more or less contemporaneous, the arrangement of features in the seriation is modified to achieve this.

A third argument for ordering the pottery is the stratigraphic *superposition* of traits in other archaeological contexts like layers of stratigraphic excavations. The superposition observable in this kind of evidence is the most direct clue to chronological changes. However, excavations in settlements have been scarce by the time Dawson established his sequence; so they were used only as secondary indices. The stratigraphic evidences known from the excavations by Strong (1957) in Cahuachi seem to prove the first three

phases. Other evidences of stratigraphic superposition are not published. Apparently the University of California's excavations in Ica yielded a superposition of phases Nasca 4, Nasca 5 and Nasca 7 (Proulx 1968: 8). Nasca 7 and Nasca 8 have been found at Estaquería in Nasca (Strong 1957). Another superposition of phases Nasca 7 to 9 has been documented in Ica, and served as a basis for better definition of this phases and a subdivision of phase Nasca 7 in three subphases (7A-C) (Menzel 1971; 1977: 88).

A.5.2 Definition of the Dawson Nasca Phases

While the method of similiary seriation has been described in considerable detail (Rowe (1960, 1961), a comprehensive understanding of the exact definition of the nine phases is hindered by the fact that Dawson himself never published any detail on his seriation; neither did anyone else publish it completely. Parts of the sequence have been treated in individual studies, concentrating on some phases or some design themes. Still, only some of these studies have been published, others are frequently cited as unpublished manuscripts.

There are some articles that give an overview of the principal changes throughout the sequence (Blagg 1975; Pezzia 1968; Proulx 2006; Rosselló Truel 1960; Silverman 1993; Silverman/Proulx 2002). Some contributions focus on certain phases or other details of the sequence (Knobloch 2005; Menzel 1957; Proulx 1968; Roark 1965; Silverman 1977; Strong 1957; Wegner 1975, 1976; Wolfe 1981). Other publications present Nasca burials with Dawson phase-assignment (Proulx 1970; Kroeber/Collier 1998). Together, these publications provide a background to understanding the main idea of the seriation and to assign the majority of Nasca-ceramics.

For some phases or iconographic themes lists of features exist. This is the case for N3 and N4 (Proulx 1968), and for the Mythical themes of N5 and N6 (Roark 1965), and of N6 and N7A (Wegner 1976), as well as for some selected themes from N1 to N5 (Wolfe 1981). For the other phases the information is sparse, a fact that hinders secure dating of artifacts. Even for the better published phases N3 to N6 there remains some uncertainty regarding the placing of natural and geometric themes, components and their features. Here, the main sources are published photos and drawings which might serve as example. The transition from Nasca 4 to Nasca 5, as conceived by Dawson, is poorly understood, due to the separated investigation und publication of these phases (Roark 1965 and Proulx 1968).

The following account presents a short version of the definition of Dawson's Nasca phases. In some instances this has to be tentative due to a lack of published information. In other cases the available information is so numerous that the limited presentation will cause the reduction to what I feel are the outstanding characteristics. In any case, for a profound understanding of the sequence it is necessary to consult the above sited sources. The chronological discussion of the phases will be done later in this study, comparing the Palpa pottery to the data available for other valleys.

Many of the themes and features presented in this chapter are illustrated in the catalogue of Palpa pottery presented within this study. Other designs not present in the Palpa sample are accessible through other studies on Nasca pottery; some of these illustrations will be additionally provided here, in order to better understand the text. References to the respective plates and figures are included in the text.

A.5.2.1 Nasca 1

The phase Nasca 1 was briefly presented by Menzel, Rowe and Dawson (1964:251-256). The definition is based on pottery from Ica and from Cahuachi. A short list of themes present in this phase is given by Silverman (2002a), and compared to the preceding phase Ocucaje 10 of the Paracas-Style.
Strong (1957) briefly discusses the Proto Nazca/Nasca 1 material from his excavations at Cahuachi. He defines four pottery types to describe the materials of this period at Cahuachi.
In recent studies Nasca 1 is often joined with Ocucaje phase 10 to form the phase Initial-Nasca (Reindel/Isla/Koschmieder 1999), or Proto-Nasca (Sawyer 1966; Silverman/Proulx 2002). Materials from both phases and from the Topará style are frequently found in a mixed context, suggesting a coexistence of all styles with a sporadic change in the frequency of each style (Proulx 2006: 32; Sawyer 1966).

A.5.2.1.1 Nasca 1 Decoration

The beginning of the Nasca 1 phase is defined by the technical shift from post-fired organic pigments to pre-fired mineral pigments for decorating the pottery (Menzel/Rowe/Dawson 1964). The decoration outlining is still executed by incision like before. Just in phase Nasca 2 the outlining incisions were replaced by black or white painted lines or there may be no outlining at all. While this shift marks the beginning of the style, only a small part of the Nasca 1 pottery is described by this definition.
A further definition of the Nasca 1 pottery in terms of themes and features is difficult, due to the small number of known polychrome decorated Nasca 1 pottery. Silverman (2002a) lists the main themes observable on published vessels, but nearly all of the representations known are unique. Additionally, as this type of pottery is very rare it is not the typical find in a Nasca 1 context. In fact, most of the Nasca 1 pottery is monochrome (Plates I.11: 1-3, I.32: 1-2; I.36). Therefore, in the case of Nasca 1 pottery, a stylistic approach based on iconography is not useful for classifying most of the material. Other characteristics of the pottery, such as shape and decorative technique, are more important.

On the basis of decorative techniques Strong (1957) defined four contemporary pottery types that correspond to Dawson's Nasca 1 (Figs 4): *Cahuachi Polychrome Incised and Modeled Thin* (Strong 1957: figs. 7f, g, 10A-I), *Cahuachi Polychrome Incised and Modeled Thick* (Strong 1957: fig 10J), *Cahuachi Stylus Decorated* (Strong 1957: figs 7A-C, 9G-I), and *Cahuachi Polished Black Incised* (Strong 1957: fig 9A-F). Two other types can be added that Strong failed to identify as Nasca 1: *Cahuachi Negative* (Strong 1957: Fig. 3 K, L) (Plate I.4: 6), and *Cahuachi red and white decorated* (Strong 1957: Fig. 7e) (Silverman 1993:43).
The first two types present the rare polychrome pottery; the other two are reduced fired black ware, one with pattern burnishing, and the other with incision. It is interesting to note that Orefici (Orefici/Drusini 2003:145) defines these later two blackware types as Nasca 0, a pottery present during the first three phases of the Dawson sequence.
The last two types represent the part of the known Nasca 1 pottery. This monochrome pottery without incised decoration (Sawyer 1966) is more akin to the Chongos-Style pottery of the Topará tradition from Cañete although walls are not as thin and the engobe is not as fine as in the Topará heartland. The use of the engobe based painting is

technically not so much an innovation, as it goes back to the ceramic tradition from Cañete (Wallace 1986). Only the range of colors and the combination with incisions adapted from the Paracas-Style is new. Overall, the phase is characterized as experimental. The engobe is applied in varying thickness. In contrast to the following Nasca phases we are faced with a multitude of decorative techniques: pattern burnishing, incision, reserve-painting, false reserve painting and polychrome engobe painting.

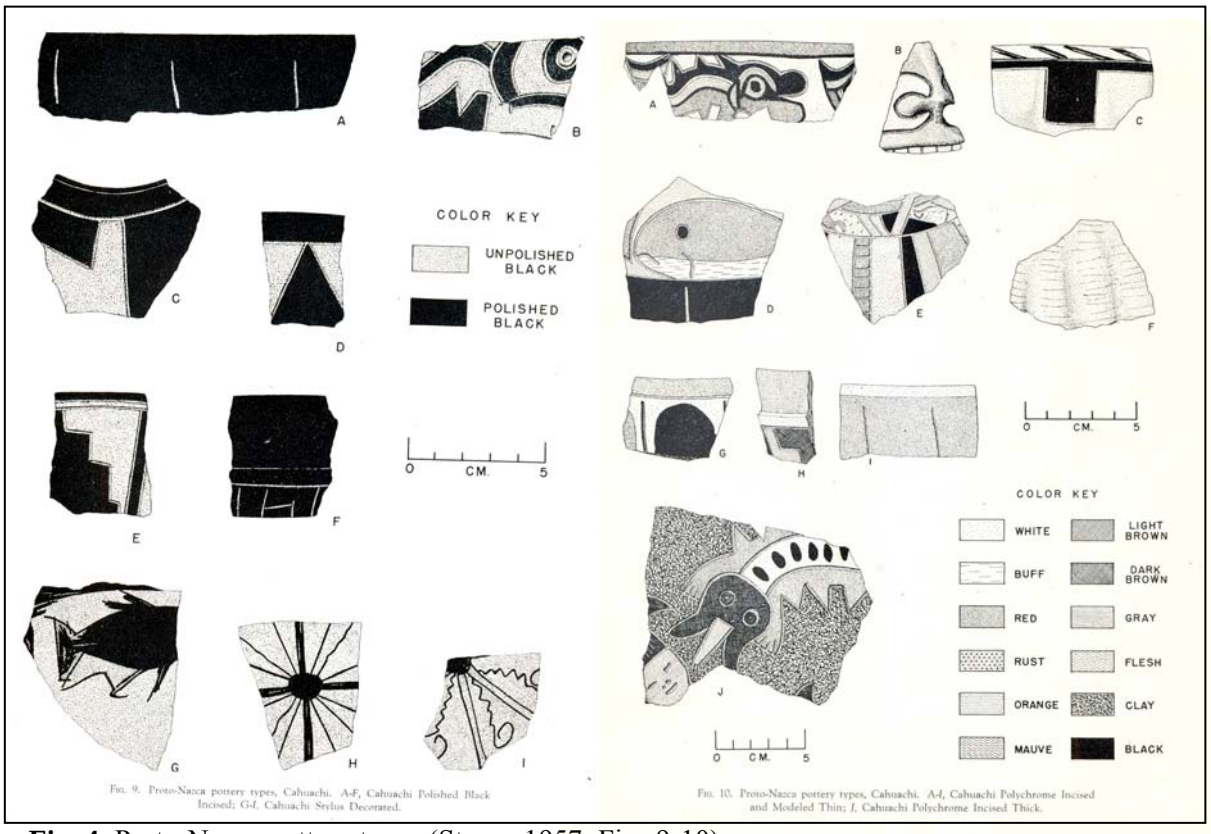


Fig. 4: Proto-Nazca pottery types (Strong 1957: Figs 9-10)

A.5.2.1.2 Nasca 1 Shapes

Vessel shape is alongside the decorative techniques the main criterion for defining Nasca 1 pottery. A sketched overview of shapes and decorations documented in Ica is provided Pezzia (1968: Lam. XXII) (Fig.5). The most striking feature of Nasca 1 bowls is the pronounced base angle observable on bowls and double-spout bottles (Rowe/Menzel/Dawson 1964: 253). Unfortunately Rowe, Menzel and Dawson do not provide illustrations of Nasca 1 pottery. Walls of bowls are often low and convex, sometimes incurving (Plates I.36; I.37). Other bowls have higher, more vertical walls. Some bowls have no base angle; often these show reserve decoration.

The polychrome slip painting, new to that phase, is mainly restricted to an also new shape class: modelled single-spout-bottles with the body formed like a bird, a sitting human, a fisherman with a boat, a trophy head, or a monkey, among others. However, it has also been observed on ceramic drums, bowls or huge oval vases.

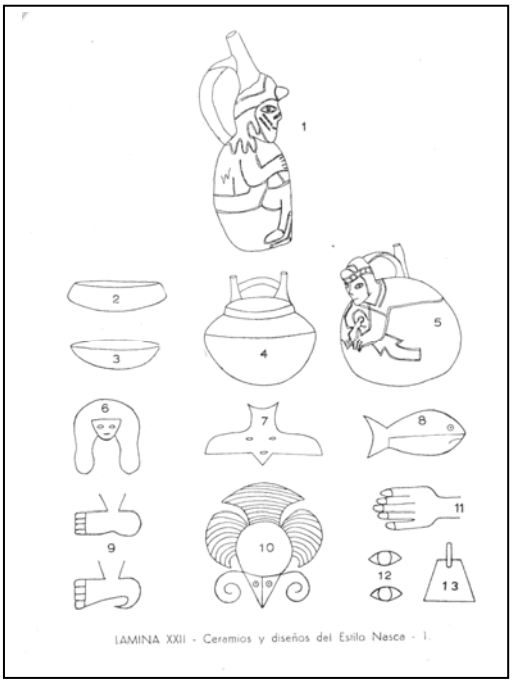


Fig. 5: Nasca 1 shapes and decoration from Ica (Pezzia 1968: Lam. XXII)

Double spout bottles resemble, in the shape of base and base angle, the bowls. The bridge between the two spouts is more highly curved than during Ocucaje 10; the overall appearance of this shape class is less gourd shape like, and they mostly lack the earlier vertical grooves (Sawyer 1966). Also new are modelled bottles that resemble a filled bowl or basket (Strong 1957 fig. 7 F, G). Further shapes are neckless jars, large jars with tapering rim, and drums (Tello 1959, lam. LXXXII).
Illustrations of simple shapes and undecorated vessels are generally rare. Menzel, Rowe, and Dawson (1964) describe some shapes, but without illustrating them. A series of Nasca 1 bowl types is depicted in Silverman (1993).

A.5.2.2 Nasca 2

Published information on Nasca 2 is comparatively scarce. The definition of this phase is based on Strong's excavations at Cahuachi, where he defined the type Cahuachi Polychrome (Strong 1957). In the stratigraphies this type was found between Proto-Nasca and Early Nasca, but always mixed with the corresponding types, only in changing proportion (Strong 1957: Table 3). It is to be noted that the mixing of types might be due to Strong's method of excavating in arbitrary strata.
Dawson recognized Nasca 2 as a distinctive phase after revising Strong's materials and defined the phase according to Strong's type definition (Rosselló Truel 1960: 65). This short description (Strong 1957: 25; fig. 11) (Fig. 6) is the best information available for this phase. Additionally, Nasca 2 pottery is depicted in Kroeber and Collier (1998: figs. 133-135, 140-142, 145, 388-389).
Silverman (1977) proposed a further stylistic differentiation of Strong's materials based on a similiary seriation, resulting in three subphases, Nasca 2 A, B, and C. The results of the seriation have not been published and the subdivision is generally not used. Some

additional information on this phase can be found in the discussion of the spotted cat-theme that starts in Nasca 2 (Wolfe 1981).

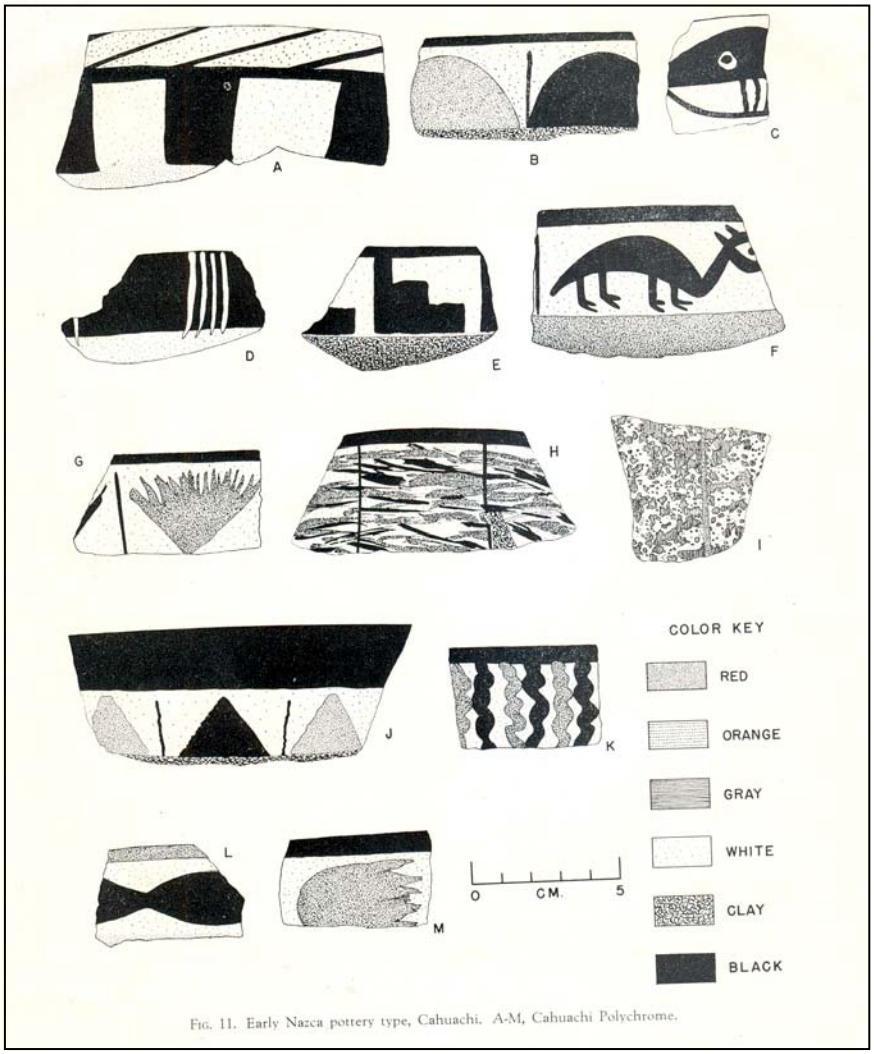


Fig. 6: Early Nazca/Nasca 2 decoration (Strong 1957: Fig. 11)

A.5.2.2.1 Nasca 2 Decoration

The decorative technique known in Nasca 2 is not as variable as in Nasca 1. By definition, the decoration is characterized by the use of engobe. Backgrounds are mostly white; the decoration is applied in black, brown, violet, or red. The most striking characteristic is the frequent lack of outlining of the motives. Most ceramics are held in a quite severe fashion, with few colors used on one vessel and very simple or geometric motives like circles, crescents, diamonds, or foot-like designs. Another characteristic design is splashing (Silverman 1977) (Plate I.26:8-11).

However, some elaborated pieces without known context are assigned to this phase. These pieces are regarded as the starting point for depicting complex themes on pottery. The best known examples are the Bernstein drum and the Haeberli flute. These are cited as type-pieces for Nasca 2 (Silverman/Proulx 2002: 27). They are thought of to be early

examples of complex iconography because of their stylistic similarity with Paracas Necropolis textiles.

A.5.2.2.2 Nasca 2 Shapes

The shapes of Nasca 2 are quite characteristic, because traits of the angled Nasca 1 shape are conserved that disappear in early Nasca 3. The basic shapes can be described as follows (Strong 1957: 25):

- small gambreled bowls (walls are thinner than in Nasca 3, the shape is essentially Nasca 1) (Plate I.15)
- small outflaring bowls (Plate I.20: 1)
- small bowls with sharply incurving rims
- almost hemispherical bowls
- small plates with designs painted on the inside
- platform double spouted vessel
- jars with short everted necks

As Strong based his analysis on the type concept, shapes were of secondary importance to him. So they are briefly described, but not depicted. Some sketch drawings of materials from Ica are provided by Pezzia (1968: Lam. XXIII) (Fig. 7). Good examples of typical Nasca 2 inside painted bowls are found in Kroeber/Collier (1998: Aja grave 6). An example of a mythical theme is in Orefici/Drusini (2003: Fig. 41a).

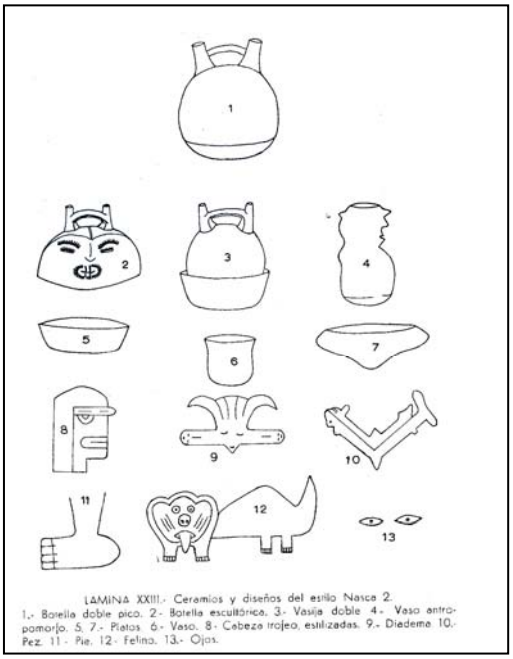


Fig. 7: Nasca 2 Shapes and decorations from Ica (Pezzia 1968: Lam. XXIII)

A complete reconstruction of themes and features defined for Nasca 2 from literature is not possible. Neither the decorative traits, nor the shapes have been sufficiently published. For dating purposes it is easier to refer to Strong's type description. A

revision of phase 2 based on a great sample of materials from controlled excavation would be desirable.

A.5.2.3 Nasca 3

Phase Nasca 3 is one of the most completely presented phases of the sequence. But, the iconographic variability and complexity increases to a degree that it becomes hard to give a detailed overview. So, for any specific detail one must refer to Proulx (1968) who presents a thorough description of themes and features of that phase. Proulx's analysis is based on a sample of 797 vessels from Phases Nasca 3 and Nasca 4 from the valleys of Nasca and Ica. Analysis comprises shape, decoration and fabric. An additional discussion on Nasca 3 decoration is presented by Wolfe (1981) with the discussion of two specific themes (Spotted Cat and Horrible Bird) that includes many illustrations and lists the phase-specific features. General overviews are the same for all the sequence (see above). Illustrations with Dawson-phase assignment are found principally in Proulx (1968, 1970) and Kroeber and Collier (1998).
It is to be noted that Proulx presents the data separately for the Ica and Nasca regions, to show the regional differences. This valuable information will serve for later discussion of regional characteristics of the Palpa pottery. Here, for reasons of comprehensiveness, Nasca 3 will be presented as a homogeneous style. Anyway, most features are present in both regions, and only the moment of their introduction differs.

A.5.2.3.1 Nasca 3 Decoration

A complete description of the decorative features and themes is beyond the scope of this work and is not necessary because it has been presented by Proulx (1968). Here, the general development of the style will be outlined and the details analyzed by Proulx will be summed up for better understanding of the sequence as a whole.

Nasca 3 is the fully developed Monumental Style. Range of colours is up to 15, including the different shades. The list of depicted themes has been considerably augmented since Nasca 2 and later in the style only a few themes will be added, changes will occur mainly in the execution of the themes. Figures are generally outlined in black although on dark backgrounds absence of outlining or white outlining may occur. Background colours vary between white, red and black. Red backgrounds are more frequent than in later periods. The design covers only a relatively small part of the design area, leaving large parts of the background undecorated. The interior of bowls is usually covered with a red slip. Some monochrome vessels occur.
A list of Nasca 3 and Nasca 4 themes is presented by Proulx (1968: 18-21). Many of the design themes have naturalistic characteristics; there is a multitude of plants, fish, birds, and animals. Even the mythical representations show naturalistic anthropomorphic or zoomorphic traits. Some geometric designs exist. In general these are not combined with other themes as happens in later phases.
The artist's concentration on one central design, sometimes repeated around the vessel, but always leaving much of the background uncovered, defines the monumental character of the style.

Proulx (1968) presents a list of defined N3 and N4 features and their chronological and regional distribution. For each theme the distinct traits are listed. Distinct traits are those

that show changes through time. Others may be more stable and thus of minor importance to chronological analysis. An extract of the distinct traits that are characteristic for phases Nasca 3 and Nasca 4 respectively is provided in Table 5.

Nasca 3-4 themes	N3 distinct design elements	N 4 distinct design elements
Anthropomorphic Mythical Being (AMB), types 1-5 (Fig. 3)	• forehead ornament with open eyes (Plates 1:8; 2:5) • hooks lacking on forehead ornament (Plate 1: 3, 8) • solid colored cap above forehead ornament (Plates 1: 1, 10; 2: 4) • thumbnail unoutlined • finger lines cross over into colored area of the hand (Plate 3:6) • feline head terminator front paws rounded • feline head terminator with open eyes (Plate 5: 4)	• colored band above forehead ornament decorated with geometric designs • loop type hook of forehead ornament • white lobes under colored band (Plate 7: 1, 8, 9) • black hair hanks outlined in white • multicoloured necklace (Plates 4: 5; 8: 7) • feline terminator has squared paws (Plate 5: 4) • feline terminator has slit line or dot eyes and mouth • black face painting around eyes
Spotted Cat (Figs 8-9)	• Irregular shaped spots • black cap over head • rounded front paws • mouth mask present	• differentiated thumb • bird track spots (Plate 28: 2) • mouth mask absent • face painting around eyes • differentiated end of tail • geometric band found within the body (Plate 28: 1, 2, 4)
Horrible Bird (Fig. 10)	not present	• Curved beak • trophy heads with slit line eyes • hawk markings around the eyes • feathers in form of snakes with protruding tongues (Plate 29: 2, 3) • hair on beak present (Plate 30: 2)
Killer Whale (Figs 11-12)	• Naturalistic • chin present • closed jaw • open jaw (Plate 16: 1) • “Bull’s eye” eye (Plate 16: 5)	• chin present • closed jaw • open jaw • “Bull’s eye” eye • hair on jaw (Plate 16: 1, 5)
Serpentine creature	• realistic ears	• spikes outlined on white, decorated lobes above the head
Birds (hummingbirds, black swallows, garzas, waterfowl, condors, other forest birds)	• tail feather tips unoutlined (Plate 65: 2) • feet attached to leg (Plate 65: 1) • single wing on garzas (Plate 65: 4) • triangular anal region • curved neck of garzas (Plate 64: 4)	• peaked head (Plate 68: 2) • ornamented pouch (Plate 68: 2) • beak of black swallow points straight up (Plate 72: 3) • treelike feet attached to swallow body • swallow beak has hair along it (Plate 72: 1) • open type head of garzas (Plate 65: 7) • straight neck of garzas (Plate 65: 7) • double wing of garzas Plate 64: 8)
Fish (flat fish, curled fish,	• gill slits below eyes (Plate 73) • gill slits don’t cross median line	• gill slits do cross median line • cleft points used on the fins (Plate

cigarshaped fish, other fish	(Plate 73) • curled fish present (Plate 74)	76: 5)
Trophy heads	• wavy sling	• cleft points used on nose (Plate 49: 1)
Fruits (beans, peppers, corn, jíquima, lúcuma, other fruits)	• alternating red and black striped peppers (Plate 78) • floating coloured filling (Plates 80: 10; 84-85; 89)	• cleft points in beans • fruits in three vertical bands (Plate 82: 7-10) • thick stems on heart shaped fruits • small miniature fruits (Plate 90) • white dot at base of fruit (Plate 83: 6, 9) • criss cross line in fruits
Geometric designs (step designs, wavy lines, 8-point stars, missiles and/or darts, diamonds and hatching, boxes, crescents, circles, other	• step design with dashes (Plate 114: 10) • recurved step fret design • lack of horizontal border line on double spout bottles	• geometric step designs painted with bars • fish scale design • 8 pointed star (Plate 112) • red bands in cup bowls (Plate I.23: 1, 5) • segmented circles • use of ring banding • pink background (Plate 68: 1) • coloured band below design area on round bottom bowls (Plates 78: 6; I.3: 2; I.7: 3)

Table 5: Nasca 3-4 themes and distinct features (Extract from Proulx 1968: Appendix 4, 5)

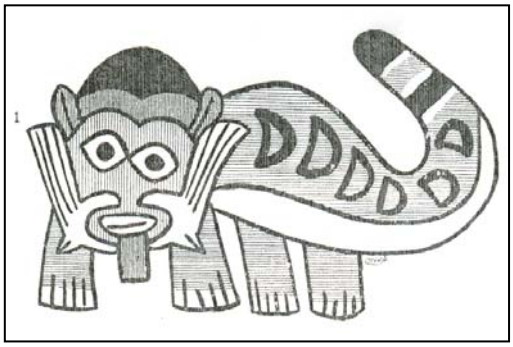


Fig. 8: Spotted cat, N3 (Seler 1923: Abb. 1)

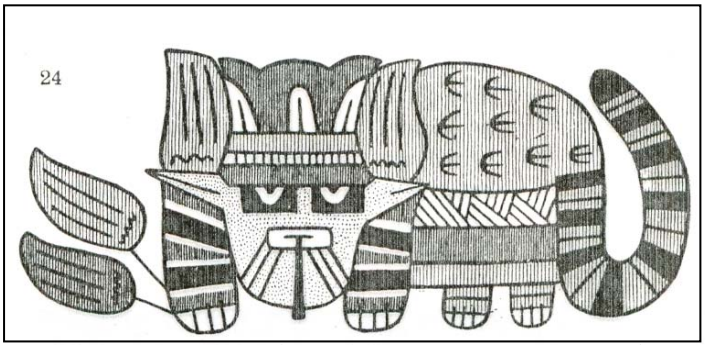


Fig. 9: Spotted cat, N4 (Seler 1923: Abb. 24)

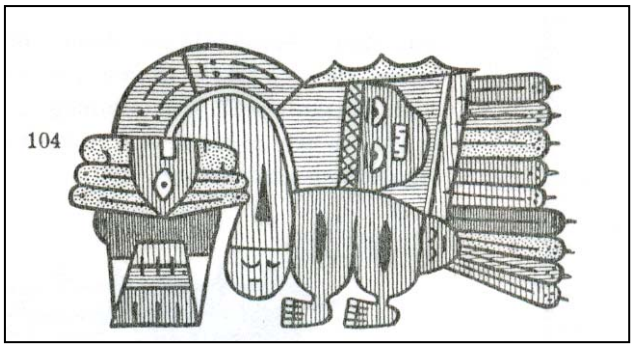


Fig. 10: Horrible bird, N4 (Seler 1923: Abb. 104)

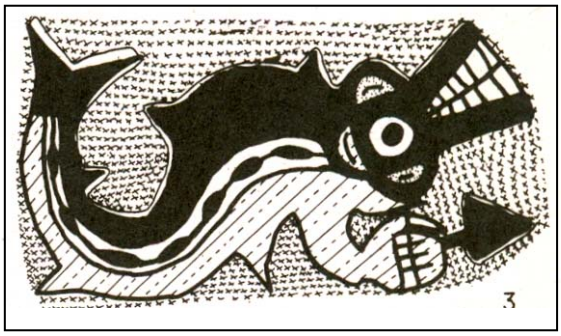


Fig. 11: Killer Whale, N3 Blasco/Ramos 1980: Lam. XXV, 3)

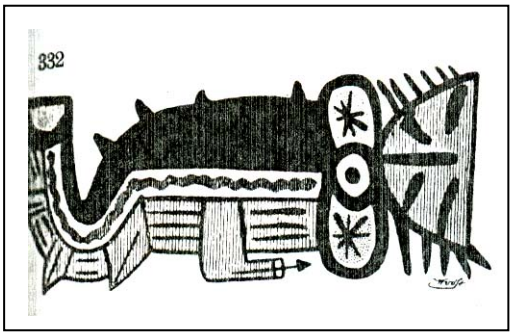


Fig. 12: Killer Whale N4 (Seler 1923: Abb. 332)

A.5.2.3.2 Nasca 3 Shapes

Shape categories have been presented by Proulx (1968: Table 2). The general taxonomy of his classification is presented in Table 6. These shape categories provide a good organization of existing Nasca 3 and Nasca 4 shape classes. Nasca pottery is characterized by a limited set of basic shapes and their variations. However, for integration of the shapes of later phases the scheme would have to be extended.

In some aspects Proulx's shape classification is problematic: Dishes have been defined in base of interior decoration and thus are not a shape class in a strict sense. Round bottom bowls and conical bottom bowls are very similar with the exception of the base shape. The bulbous vase is correctly placed among the jars as it is a neckless jar, but regarding the later phases when vase types become more frequent it might be classed as a vase. The head jar category is not a shape distinction, but an iconographic distinction, it is a generally a bulbous vase.

Proulx (1968; 1970) further subdivides Nasca 3 in four subphases A-D. Main arguments for this subdivision are subtle changes in vessel proportion. While this subdivision is adequate for the presented burial contexts, it is difficult to use it for classing fragmented pottery from excavations. On the other hand, on the basis of general shape categories nearly no chronological distinction is possible.

I. Bowls	A. Flaring bowls (Plates I.18; I.20)
	B. Cup bowls (Plates I.29-31)
	C. Round bottom bowls (Plates I.2; I.12; I.15
	D. Conical bottom bowls
	E. Very deep bottom bowls (Plate I.27)
	F. Dishes (1.17)
II. Double spout bottles	(Fig. 1)
III. Jars	A. Bulbous vases (1.42)
	B. Head jars (Fig. 1)
	C. Straight sided jars (Plate I.34)
	D. Collared jars (Figs 1, 2)
IV. Miscellaneous shapes	A. Effigy pots (Fig. 1)
	B. Incurving vessels (Proulx 1968)
	C. Insloping vessels (Proulx 1968)
	D. Other (Proulx 1968)

Table 6: Nasca 3 and Nasca 4 shape categories (after Proulx 1968: Table 2); cf. also (Fig. 2)

A.5.2.4 Nasca 4

Dawson's original definition of the Nasca 4 phase was further refined by Proulx (1968) and is therefore well published. Proulx gives a complete account of Nasca 4 themes and features observed in his sample from Ica and Nasca, and he compares the material with Nasca 3 so that the transition between these two phases is sufficiently described (see above). However, there is no study about the transition from Nasca 4 to Nasca 5 and in some cases there is a problem in distinguishing it from conservative Nasca 5 pottery. The problem of the fragmentary publication of the Dawson sequence becomes obvious when revising the features defined as characteristic for Nasca 4. Proulx mentions the features that are new in phase 4, but these persist until phase 5 (see Roark 1965; e.g. eye form of navel (Plate 6: 5), multicoloured necklace (Plate 10: 7, 11), dots on the club (Plate 3: 1, 3, 4, 7), cleft points (Plate 27: 1, 2, 5, 8). Consequently, in isolated form these traits cannot be considered as diagnostic Nasca 4 traits.

A.5.2.4.1 Nasca 4 Decoration

Nasca 4 themes are essentially the same as in Nasca 3, the differences lie at feature level (Table 5) and, to some degree, in the general depiction convention that slowly changed. The changes at feature level are gradual and the delimitation between Nasca 3 and Nasca 4 is an arbitrary one:

> In Dawson's original seriation, the cut-off point for the end of Phase 3 was arbitrarily designated as the appearance of white outlined hair locks on Anthropomorphic Mythical Beings. It was later demonstrated by my own research as well as Dawson's that many other new traits began about this same time, as evidenced by the associations of traits of drawing.
>
> (Proulx 1968: 70)

The theme that shows the most significant changes with the beginning of phase Nasca 4 is the Anthropomorphic Mythical Being of type 1 (Fig. 3).

> In summary the innovations on type 1 AMB from Nasca in Phase 4 include the outlining in white of black hair hanks, the ornamentation of the base above the forehead ornament and above the feline head terminator, new types of hooks on the forehead ornament, the trophy head form of "ears", changes in the bangles, trophy head appendages, and signifer, and the use of cleft points. I would also include as dominant and characteristic traits of Phase 4 the following, even though a few rare occurrences are found earlier in the sequence: The use of dots on the club, the "eye" form of navel, multicolored necklaces, and the trophy head breechcloth.
>
> (Proulx 1968: 82)

The iconographic canon follows the overall trend that started in phase 3: the design area becomes larger and the motive is adapted to fill great part of this area. Nasca 4 pottery develops directly from the Nasca 3 style. Blagg (1975) gives an excellent analysis of the Nasca style that helps to illustrate the character of phase 4 pottery:

> Masked Mythical Beings in Phase four have the same attributes as their Phase three counterparts, but are conceived differently in terms of design. Now, the motifs fill almost the

> entire design area, even spilling over into the banded areas meant to serve as a border. […] The white outline […] is used for contrast, a principle important to the concept of pattern.
>
> (Blagg 1975: 14-15)

> As an interest in pattern develops, however, the natural motives become much more stylized; there is crowding of the design area; color contrast becomes much more pronounced; and the convention of modal width is revived.
>
> (Blagg 1975: 22)

The *convention of modal width* has been described by Menzel, Rowe, and Dawson (1964: 66) referring to the Paracas pottery: "*Whenever possible, design features and spaces between the features are composed of bands of a modal width*." (Figs 9, 10)

A.5.2.4.2 Nasca 4 Shapes

The general shape categories of Nasca 4 can be seen in Table 6. Vessel shapes are principally the same as in Nasca 3, but vessels become higher and narrower. This developmental trend is good to see on the comparative tables of shape development presented by Proulx (1968: Fig. 1-17). The trend goes hand in hand with that observable on decoration. The enlargement of the vessel's walls augments the area to be decorated.
Another change occurs in the frequency of shapes: now bulbous vases become the dominant shape class. Flaring bowls and Round/Conical bottom bowls loose in frequency. Cup bowls form a new shape category that has developed from deep flaring bowls.

A.5.2.5 Nasca 5

The principal source of information about Nasca 5 is provided by Roark (1965). He presents the transition from Monumental Nasca to Proliferous Nasca through an analysis of Nasca 5 and Nasca 6 pottery. The discussion includes a classification of shape. Unlike Proulx, Roark concentrates on the discussion of style, his perspective on Nasca pottery is an art historian's. He makes use of the Dawson sequence but does not regard the burial associations nor does he propose further chronological division of this stylistically complex phase. Also the possibility of regional differences is not a subject of this study. It is more than probable that regional differences as observed by Proulx for phases 3 and 4 persist and a regional analysis could help a lot to better understand the stylistic complexity of the phase.
Additional information on some themes is found in Wolfe (1981). Blagg (1975) discusses the general development of style in Nasca 5 times. In her discussion she does not enter the feature level. Still her work is indispensable in understanding the stylistic innovations of phase 5 that account for the complexity of the phase. The testing of the stylistic sequence with burial associations shows clearly the contemporaneity of different substyles (Kroeber/Collier 1998).

A.5.2.5.1 Nasca 5 Decoration

Phase 5 marks the transition between the two main substyles Monumental Nasca and Proliferous Nasca (Blagg 1975). The phase is characterized by the contemporaneity of three minor sub-styles: the Progressive Monumental Style (approx. 10% of the known

Nasca 5 vessels) (Fig. 15), the Bizarre Innovation Style (6-10%) (Fig. 16), and the Conservative Monumental Style (Fig. 14). This last develops directly out of the Nasca 4 Monumental Style. The Progressive Monumental Style is characterized by the *appendage convention* (Blagg 1975) that has its origins already in Phase 4. The design is executed in the tradition of the Monumental Style, but as a characteristic difference there are appended elements, like hair hanks that are not elements important to the design theme, but mere appendages and space fillings. There are more proliferous elements; besides the hair hanks there are volute ray, quartet ray and jagged ray (Roark 1965: 16; Fig. 34) (Fig. 13). These traits become most characteristic in Nasca 6 and Nasca 7, but some early examples are known from Nasca 5 (Plates 13: 8; 50, 1-3).

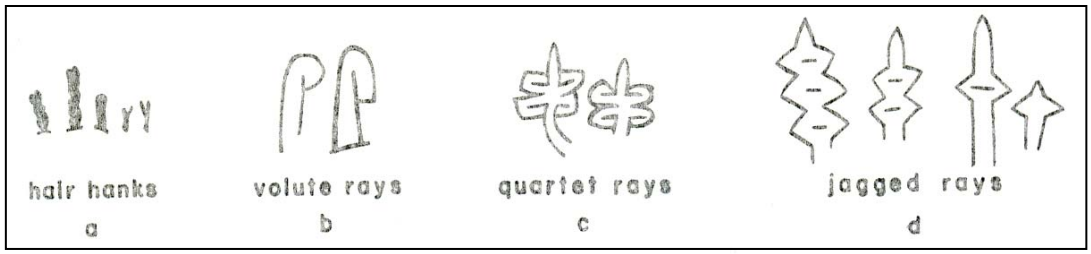


Fig. 13: Proliferous elements (Roark 1965: Fig. 34)

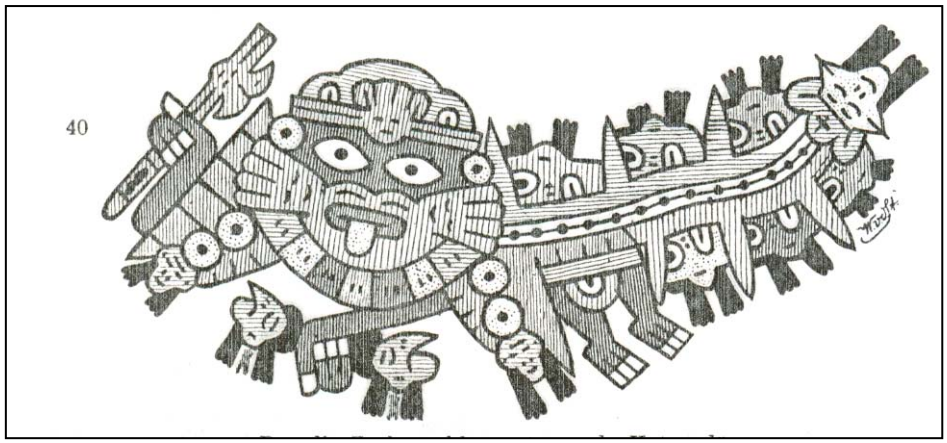


Fig. 14: AMB, N5, Monumental Style (not proliferated) (Seler 1923: Abb. 40)

The Bizarre Innovation Style (Blagg 1975), also called the Radical Style (Roark 1965), shows the strongest aberrations from the Monumental Style depiction conventions. Design themes depicted in the Bizarre Innovation Style are purely mythical and have their roots in the Monumental Style, but are modified through fundamental changes in the depiction convention (Plate 13: 7-9) (Fig. 16).

While the Bizarre Innovation Style is easily defined by its radical change of the depiction convention and the Progressive Monumental pottery shows clear signs of proliferation in its use of appendages, the Conservative Monumental Style is more difficult to define.

A concrete distinction line between Nasca 4 and Nasca 5 is not so easily drawn, because these two phases have been analyzed and described by different authors who in some instances even use a slightly different terminology. Such is the case with the Anthropomorphic Mythical Being (AMB) (Proulx 1968). Roark (1965) refers to this

theme as the Masked Mythical Being (MMB). While the varieties of MMB depictions are classified according to the form of the signifer's terminator (e.g. feline aspect, fox aspect etc.), the AMB is differentiated in five types (AMB type 1-5) depending on a series of criterions, over all the body posture. Roark's MMB developed out of types 1 and 2 of AMB with the other 3 types apparently disappearing after phase 4. The distinction between Nasca 4 and Nasca 5 Monumental style is best documented for mythical themes (Proulx 1968; Roark 1965) (Tables 7, 8).

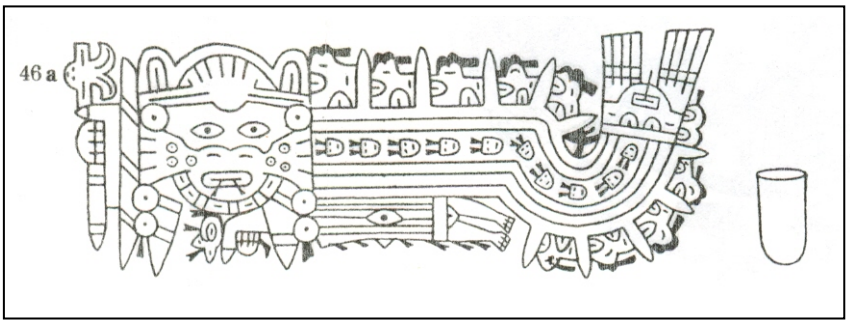


Fig. 15: AMB, N5, Progressive Monumental style, proliferated (Seler 1923: Abb. 46a)

Nasca 5 Themes (Roark 1965)	Nasca 4 Antecedents (Proulx 1968)
MMB	AMB Typ 1-2
Feline Mythical Being	AMB + Spotted Cat mouth mask
Horrible Bird	Horrible Bird
Killer Whale Mythical Being;	Killer Whale
Human Figures	Few antecedents
Trophy heads	Trophy heads
Bizarre Innovations	without antecedents
Girl Faces	without antecedents
Animals (including Spotted Cat and Killer Whale without anthropomorphic characteristics)	Animals
Birds	Birds
Fish	Fish
Plants	Plants
Geometric Designs	Geometric Designs
Woman Form Bottles	Double Spout Bottle; Fisherman Bottle

Table 7: Nasca 5 themes and its Nasca 4 antecedents (after Proulx 1968 and Roark 1965)

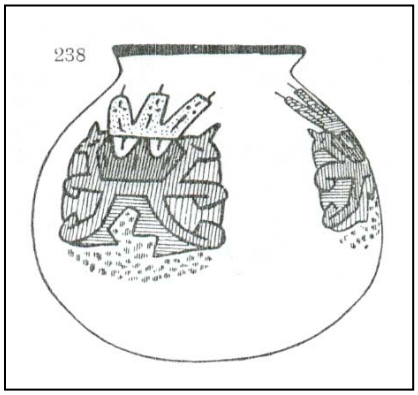


Fig. 16: Bloody Mouth, N5, Bizarre Innovation Style (Seler 1923: Abb. 238)

While the few new themes cannot be earlier than Nasca 5 per definition, in case of the themes with antecedents a differentiation at the feature level from earlier Nasca 4

themes is necessary. The delimitation of the Nasca 5 Conservative Monumental style as well as further definition of the Progressive Monumental style is defined by some distinct features or components. However, in the published studies there is no complete compilation of such features available. Neither Roark (1965) nor Proulx (1968) define systematically the differences between Phases 4 and 5.
Best information is available for mythical themes; for the naturalistic and geometric design themes the transition between the phases was not described at feature level. The only way to distinguish here is by reference photographs or drawings with phase assignation.
As a consequence of the complexity of the iconography to be described and of the sometimes deficient definition of differences in the available literature the features presented in Table 8 that have been extracted from the two authors, only provide an overview. In practice exact phasing of some specific vessels or sherds may be difficult. Additional distinct features may exist, but are not identifiable from the available descriptions. The comparison of the two studies allows phase assignment in most cases, though this may sometimes be somehow inaccurate. The description has to be considered together with the available illustrations. A more systematic presentation with complete illustrations of all discussed features would make work easier.

Where the Nasca 4 to Nasca 5 transition at level of themes and features is gradual and hard to trace other criteria of general conception of style have to be taken into account. Blagg (1975: 38) observes a change in the arrangement of space in the designs. This becomes most obvious in the Bizarre Innovation style, but is noticeable also in the Nasca 5 Monumental style. The main characteristic of the Bizarre Innovation style is a complete reorganization of the design themes. Mythical themes are reduced in their size so that they become capable by the eye without moving the vessel. In contrast, Monumental style mythical themes are depicted extended over great part of the vessel's surface, so that always only a part can be seen at one time. In Phases 3 and 4 there is only one AMB depicted while during Phase 5 generally two AMBs (MMBs) are drawn on one vessel. Apart from this, as Blagg states, the depictions can be quite similar. Other mythical themes as the Spotted Cat and the Horrible Bird show greater alterations in Phase 5 and appear more stylized and proliferated (Roark 1965: 16; Wolfe 1981).
Another important change in the design convention is the principal of symmetry. Axially symmetry of the depicted themes gains importance, a principal that previously had importance only to the face of the AMB. Within the monumental style the same trend is now observable on heads of the Horrible Bird or the Killer Whale theme (Plates 17, 30). Furthermore, in Bizarre Innovation, the headdress and the mouth mask, that are components of more complex themes, now become independent themes that might be interpreted as abbreviations of the themes (*pars pro toto*) (Figs 16, 17).
Accompanying this appendage convention the following general trend can be noted:

> As the transition from the Monumental to the proliferous pattern proceeds, designs become somewhat less representational and more dissected anatomically. Body parts have less accurate contours and are often depicted in anatomically impossible positions or omitted entirely (Roark 1965:16).

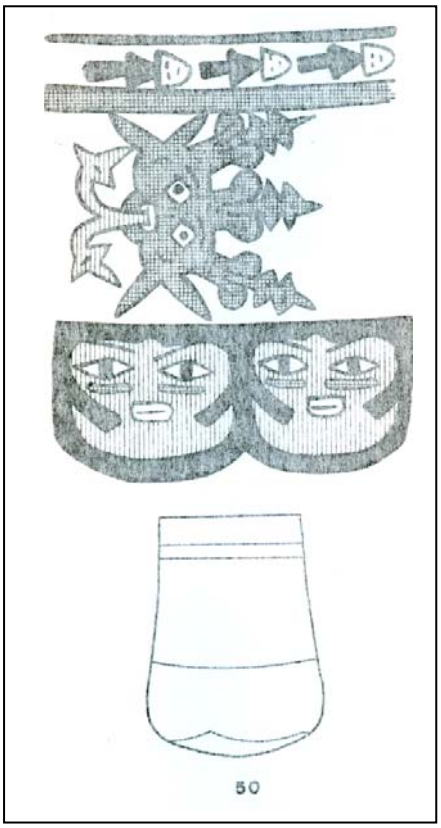


Fig. 17: Rayed face, girl faces, trophy heads, N5, Bizarre Innovation style (Roark 1965: Fig. 50)

A.5.2.5.2 Nasca 5 Shapes

According to Roark (1965: 4) the following shape classes can be defined for Nasca 5 (Table 9):

Shape category	Subcategory
Bowls	Flaring Bowl (Plate I.22)
	Cup Bowl (Plates I.29-I.31)
Vases	Vase (Plates I.40, I.42, I.46, I.48, I.51
Jars	Neckless Jar (Plate I.52)
	Tall Jar
	Trophy Head Jar (Fig. 1)
	Collared Jar (Fig. 1)
	Head Vase (Fig. 1)
Bottles	Double Spout Bottle (Fig. 1)
	Woman Form Bottle (Fig. 1)

Table 9: Nasca 5 shape categories (after Roark 1965)

As can be seen in comparison with Table 6, the terminology of shape classes differs slightly between the works of Roark (1965) and Proulx (1968). Roark includes the new shape category “Vases”, while Proulx comprises the Nasca 3 and 4 bulbous vases under

the category “Jars”. Detailed descriptions and illustrations of the shape categories are available.
The classification is also in general agreement with the Kroeber classification. Roark presents clear definitions of shape classes, based on different vessel indices. However, a further presentation of subclasses is not given. Some chronological shape distinctions between phases N5 and N6 have been observed. These are base on vessel proportions and the point of break in the wall curvature. The Illustrations provided by Roark (1965: Plates I-III) show also the Nasca 4 antecedents in shape.
The development of details of shape has to be further analyzed by comparing Roark’s and Proulx’s classifications. A direct and detailed comparison is not presented. In Nasca 5, higher vessel shapes as vases and jars gain importance, while the relative frequency of bowls declines. According to Roark’s classification that will have to be tested with the Palpa materials, the Round bottom bowl would disappear after Nasca 4. The general trend continues and vessels become narrower and higher.

A.5.2.6 Nasca 6

Nasca 6 has been discussed by Roark (1965) and in two unpublished manuscripts by Wegner (1975; 1976). Roark’s study concentrates on the development of style from phase N5 to N6 and is important to understand this transition. Some details upon shape and design are presented and illustrated, including tables of features provided for some complex themes. An emphasis lies on mythological design themes. Wegner (1976) analyzes some Nasca 6 mythical themes with the aim of further subdividing the phase stylistically. While the presented features of the design themes are an important source for the definition of phase 6, the subdivision into subphases 6 A-C postulated by Wegner is not convincing as it rests merely on details of depiction and not on burial context association or other archaeological evidences.
In another unpublished study Wegner (1975) shows the development of shape during phase 6-9. By this, the shapes of these phases can be sufficiently traced.
Apart from this, the above mentioned general overviews give some information.

A.5.2.6.1 Nasca 6 Decoration

While in phase 5 great part of the design repertoire can be understood as a development of the Monumental Style, in phase 6 the style has markedly changed and is now completely Proliferous. Unfortunately there is very little information about geometric or natural themes in Nasca 6. A definition of the differences from the corresponding Nasca 5 and Nasca 7 themes would be of interest. Together with the scarcity of N6 pottery in excavations and surface findings it becomes obvious that despite a seemingly large amount of information about the phase, it requires some more investigation.
The themes defined for phase 6 are presented in Table 10.

Nasca 6 themes (after Wegner 1976 and Roark 1965)	**Nasca 5 antecedents** (after Wegner 1976 and Roark 1965)
Spectacled Mythical Figure/MMB	MMB
Bloody Mouth (Mythical Killer Whale)	Bizarre Innovation Bloody Mouth
Black (or Dark) Eye Area Mythical Figure	Bizarre Innovation head version of MMB
Yellow Eye Area Mythical Figure	unclear; Bizarre Innovation Bloody Mouth?
Rayed Face	Bizarre Innovation Rayed Face
Yellow Face Mythical Figure	Not sufficiently described or analyzed
Trophy Head	Trophy Head
Jagged Staff Demon	Harvester
Horrible Bird	Horrible Bird
Warrior/Human Figures	Human figures
Cat-Band Mythical Being	Feline Mythical Being
Trophy head mythical Being	Trophy Head; MMB
Killer Whale Mythical Being	Killer Whale Mythical Being
Girl faces	Girl faces
Animals	Animals
Birds	Birds
Fish	Fish
Plants	Plants
Geometric Designs	Geometric Designs

Table 10: Nasca 6 themes and Nasca 5 antecedents (after Roark 1965 and Wegner 1976)

As expressed in the terminology, there are major iconographic changes in the transition from N5 to N6. While all N6 themes have N5 antecedents, the iconographic canon had changed significantly and some design themes were assigned with new names (e.g. Black Eye Area/Yellow Eye Area Mythical Figure; Trophy head mythical being). The mythical design themes can best be explained as a combination of Nasca 5 Monumental style (conservative and progressive) and Bizarre Innovation style. Through this amalgamation and the ongoing trend of adding more and more proliferous elements, the relationship between the themes may sometimes be hard to see at first glimpse and a detailed analysis will be required. The main motive, the ornamentally reproduced mouth mask was taken from the Bizarre Innovation style. However, the depiction convention is that of the Monumental Style, where the motive is stretched all around the vessel's surface, and the body, lacking in Bizarre Innovation Style is depicted again. At first sight the style seems complex, but this is through the multiplication of a few elements. These are essentially the proliferous elements known already from phase 5: hair hanks, volute ray, quartet ray, and jagged ray (Roark 1965: 16; Fig. 34) (Fig. 13).

Besides this general trend, many features can be identified that are characteristic for Nasca 6 pottery. Some of these features have N5 antecedents, others are new. In general, Nasca 6 mythical creatures (Bloody Mouth, Spectacled Mythical Figure/MMB, Black/Dark Eye Area Mythical Figure, Yellow Eye Area Mythical Figure, Yellow Face Mythical Figure, Trophy head mythical Being, Killer Whale Mythical Being) share the following characteristics:

- horizontal head and body, with the body attached to the top of the forehead ornament;
- no torso is shown;
- heads are shown full face, except for the mouth of Bloody Mouth and for the Trophy Head mythical figures of Nasca 6b an 6c;
- if forelimbs are shown, they extend out directly in front of the head (as in in-line mythical figures), they never hold trophy heads or war clubs, and the fingers of each hand are extended and have colored nails;
- the forehead ornament resembles a Rayed Face;
- the signifer is reduced in size relative to those of Nasca 5 mythical figures and appears to be less firmly attached to the head;
- the breechcloth consists of a black waste section which usually has 2 to 10 variously colored stylized trophy heads, a short subrectangular section between the legs, and two stripes which trail backward from the waist, of which one is cleft and the other is roughly rectangular and may have dashed lines;
- the legs are parallel in a bent-kneed position;
- there may be a series of linked or "chained" rayed Faces between the forehead ornament and the breechcloth

(Wegner 1976:7)

A comparison of Nasca 6 components and features with Nasca 5 (Table 11) further reveals the stylistic difference between the two adjacent phases.
Obviously, phase N6 is stylistically well defined, through a multitude of features and a specific way of depiction. However archaeologically it is mainly known from a number of burials. Fragmented pottery of this phase from excavations in settlements or from surface findings is very scarce. This is the principal reason, why the further subdivision of the phase through stylistic arguing, based on differences on the signifer and the breechcloth of mythical figures (Wegner 1976: 8), is actually not being applied. It is based on a too small number of features as to convince. Possibly the differences defined are regional. Another difficulty is the delimitation of the phase toward Nasca 7 (see below).

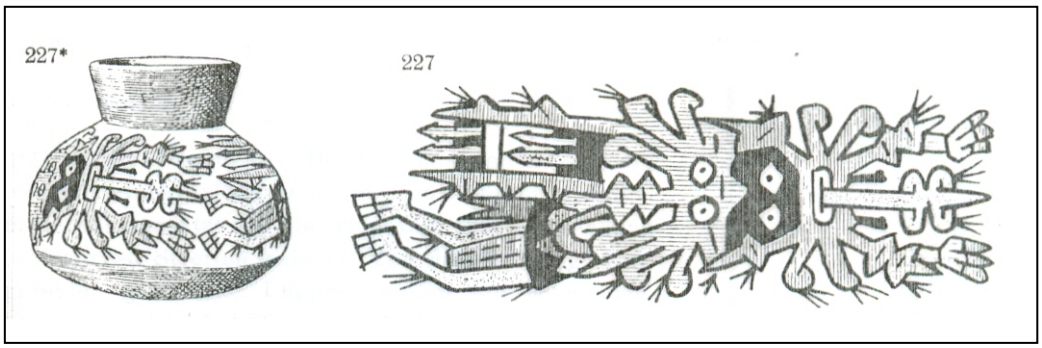


Fig. 18: AMB, Nasca 6 (Seler 1923: Abb. 227)

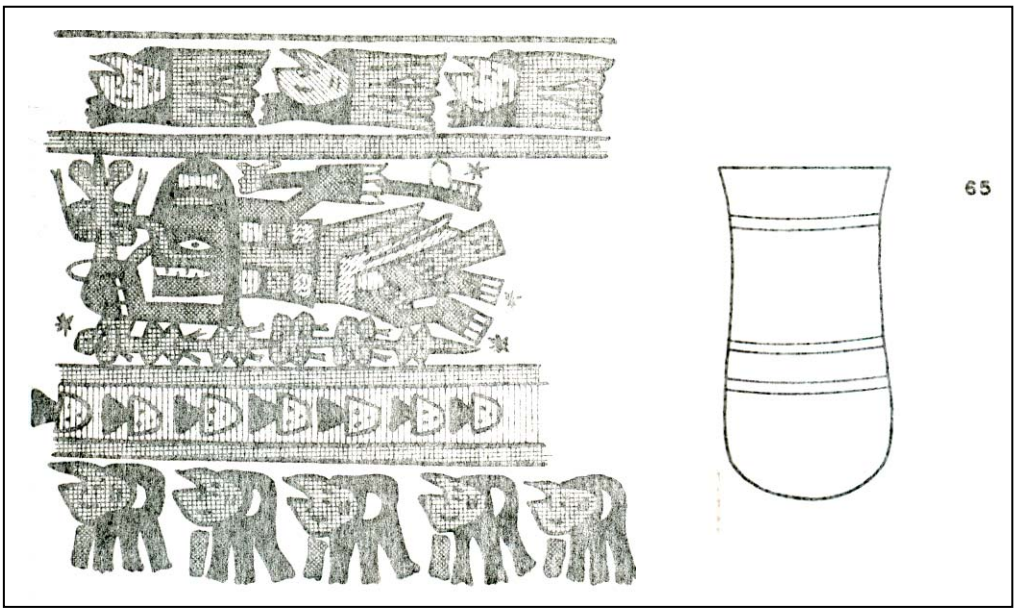


Fig. 19: Trophy head mythical being, N6 (Roark 1965: Fig. 65)

A.5.2.6.2 Nasca 6 Shapes

Nasca 6 vessel shapes are mainly developed from Nasca 5 antecedents. The general developmental trend is based on two principals and was resumed by Roark (1965: 13):

> Two main principles underlie the changes which occur in shape during the Monumental-Proliferous transition. There is increasing contrast between the horizontal and vertical dimensions, and there is also an increase in the angularity of vessel profiles [Plates I.10:1; I.30: 6; I.31: 2, 4; I. 48: 1]. Globular vessels become more elliptical while rectilinear vessels become more elongated. Base angles, shoulders, and vessel flare become more pronounced. Some specific examples follow.
>
> 1. The break height becomes lower in Flaring Bowls and Cup Bowls, producing a greater overhang in the Nasca 6 vessels.
> 2. Vases are taller and narrower in Nasca 6.
> 3. The Nasca 6 Neckless Jar has a very slight neck, which makes it less globular and more angular than its Nasca 5 counterparts.
> 4. The increased neck height and neck overhang of the Nasca 6 Trophy Head Jars produce a high, topheavy visual impression.
> 5. Collared Jars are more angular and more flattened in Phase 6 than in Phase 5. The same is true of both bottle types.
> 6. The single Phase 6 Tall Jar is more angular and more flattened than the Phase 5 Tall Jars.
>
> (Roark 1965:13)

Roark includes two new shape classes in his list: Shallow Cup Bowls and Bell Shaped Vases. As innovations, these shapes are particularly diagnostic for the Proliferous Style. As in the previous phases, vessel shapes were arranged in a few categories with the subclasses partly defined to trace chronological differences. These are best seen in vessel proportions. The trend is well documented for this part of the sequence, with

Roark (1965: plates I-III) describing the N5-N6 development and Wegner (1975) in an unpublished manuscript tracing the N6 to N9 development of shapes.

A.5.2.7 Nasca 7

A complete description of phase 7 decorative features has not been published. Menzel (1957, cited in Menzel 1971:86-92) analyzed the materials from a deep stratigraphic cut at Pampa de los Castillos in Ica for her master thesis. She proposed a division of the phase into three sub-phases. The analysis is unpublished and therefore this information is not easily accessible; it is mentioned in Menzel (1971:86-92). Some details upon Menzel's phase Nasca 7A are included in Wegner's (1976: 11) discussion of Nasca 6 mythical themes. More general descriptions of Nasca 7 are the above mentioned resumes of Nasca Style and a short article by Proulx (1994). The shape development can be seen in an unpublished manuscript by Wegner (1975).
In total, the published data about this phase is very little and the details of the stylistic development that take place during this phase can not be traced. While the proliferous style is easy to identify, the concrete delimitation of the phase in comparison to other proliferous pottery from N6 is difficult, especially in the case of fragmented pottery. Likewise the N7 to N8 transition is unclear because the drastic changes in style occurring with the highland influences already took place during N7 (Silverman/Proulx 2002:34), making it a mixed phase of Proliferous and Disjunctive elements. In fact, in excavation Nasca 7 has occasionally been documented together with Nasca 8 (e.g. Kroeber/Collier 1998: 212; 223).

A.5.2.7.1 Nasca 7 Decoration

Nasca 7 is characterized by some perspicuous changes and innovations (Proulx 1994). Perhaps the most drastic innovation is the concept of movement that is introduced to iconography: Human figures are for first time depicted in a running position. This is thought to be due to influence from the Moche area. Some new iconographic elements like the *feather staff* or the use of floating fillers or the depiction of landscape also suggest contact with Moche Style. A new theme of this phase is the Mythical Monkey that can also be explained by northern influences; in this case it may be derived from the Recuay Moon Animal.
On the contrary, some well known themes of earlier Nasca iconography are no longer depicted, for example the Spotted Cat, the Horrible Bird, and the Harvester. The MMB does persist, but in an abbreviated form, as a fan like headdress, without a body (Silverman/Proulx 2002: 34). Wegner (1976: 11) gives a general characterization of phase 7, distinguishing it from phase 6:

> The pictorial mode for mythical figures in early Nasca 7 is as much of a change from the Nasca 6 mode as it was from the Nasca 5 modes. The ray bar signifer is lacking in all but a few examples. The forehead ornament is quite different in that it usually consists of just an arc of pointed rays, volute rays and spearhead rays, which encloses peculiar "black fan" or "wall-eyed head" elements and which is attached directly to the top of the head [Plate 11:1-4]. While the horizontal position is generally retained, the hands and lower body are quite different, if present at all. In the hand position may be rectangular elements [Plate 12: 1, 3-

5], which look like some of the "tab" limbs of Nasca 5 or else like sleeves, from which more naturalistic hands emerge. Three separated rectangular elements on a breechcloth occur infrequently and may be a highly modified version of what were once trophy heads. The legs extend directly behind the head instead of more to the lower side as in Phase 6. Many other modifications are evident […]. (Wegner 1976: 11)

For Nasca 7 the following themes have been documented (after Wegner 1976; Pezzia 1968; Proulx 1994, 2006). Those themes that are new allow a clear classification as Nasca 7, even if the composing features are unknown:

- Running Warriors (Fig. 20)
- Fan Headed Anthropomorphic Mythical Being (MMB without torso) (Plate 11: 1-4)
- Mythical Monkey (Silverman/Proulx 2002: Fig. 2.10)
- Trophy heads (Plates 51-52)
- Interlocking fish
- Girl faces (Plates 37-39)
- Star with eye (Plate 15)

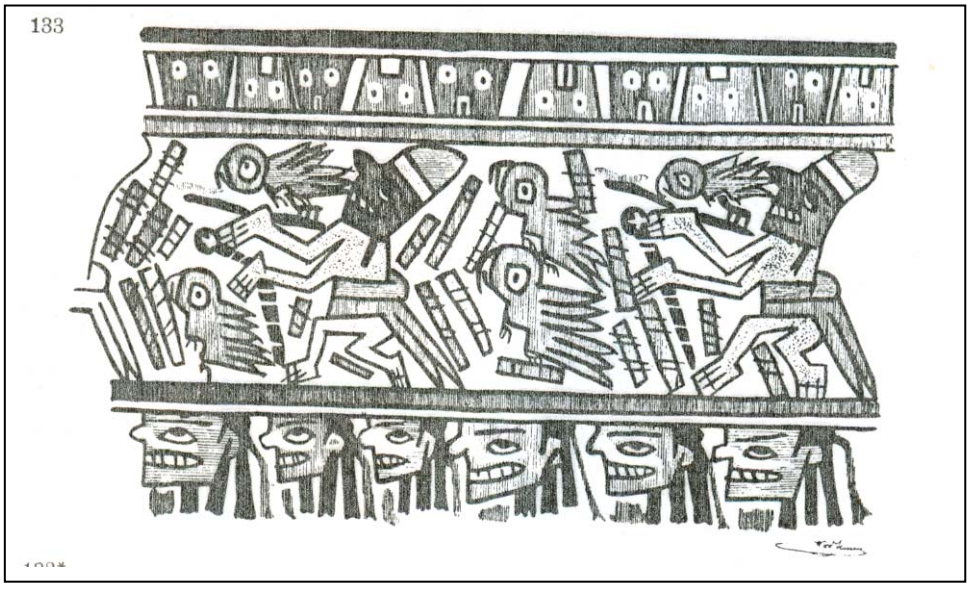


Fig. 20: Running warriors, N7 (Seler 1923: Abb. 133)

Apart from these mythical and anthropomorphic themes, there seems to be some return to Monumental Style naturalistic themes, such as birds, felines, fruits, lizards, frogs, and fish. These are said to be depicted in a somehow hasty way. However, a detailed illustrated presentation of these themes is missing and consequently the definition boundaries towards N5 and N6 remain unclear.

A.5.2.7.2 Nasca 7 Shapes

Like decoration some significant changes also occur in shape.

> There seems to be more shape change within Nasca 7 than was the case for the preceding phase. A possible explanation for this is that the time covered by Nasca 7 may happen to be greater. Certain trends do not continue throughout the phase: 1) Tall

> Vases become taller and then disappear, 2) Double Spout Bottles, Head and Spout Bottles become more squat-bodied and then disappear or metamorphose, and 3) the collars of collared bottles become shorter and more cylindrical. Beginning within the phase are such trends as: 1) greater roundedness and more gradual flaring of the Vases, 2) globularity of Face-neck bottles, and 3) cumbrosity and simplification of contour of the bowls [Plate I.26: 1-2]. It is very significant that there is a general simplification trend in design toward the latter half of Nasca 7, paralleling the gradual deangularization of shapes. The Double Spout Bottle, Head and Spout Bottle, Collared Bottle, Tall Vase and Cup Bowl cease to be produced and the single Spout and Face-neck Bottles, Conical-bottomed and Cumbrous Bowls, and Flaring and Biconical Cups are developed. (Wegner 1975: 30)

Many traditional shapes disappear during phase N7: Tall Vase, Tall Head Jar, Head and Spout Bottle, and Collared Bottle. Other new shapes occur that are explicable by outside influences (from Ayacucho, Lucanas, Moche), e.g. the Face Neck Bottle and a bottle with single long tapering spout. By this, N7 is a heterogeneous phase with a part showing similarities to N6 and another part being more akin to N8. However, these details of stylistic development can not be traced from the available literature.

A.5.2.8 Nasca 8

With phase Nasca 8 the Early Intermediate Period at the south coast ends and Middle Horizon starts. The style can best be regarded as developing from Nasca 7 but with strong highland influences that change the character of the style substantially. Therefore Nasca 8 is not considered a Nasca Style anymore (Isla 2001b; Silverman/Proulx 2002:36; Paulson 1983). Phase Nasca 8 is now better known as Loro Style, named after the Type Site Huaca del Loro in the Trancas valley (Strong 1957: 36-41; Figs. 15, 17) (Fig. 21). Strong provides some description and illustration about decoration and shape. The shape is further discussed by Wegner (1975). A detailed account of iconographic features is not available, but in fact the style does not demand this, as design becomes quiet simple, much of the vessel's surfaces are monochrome and hence other criteria as shape and the general design-canon gain importance.

A.5.2.8.1 Nasca 8 Decoration

Nasca 8 ceramics are characterized by a relatively simple and mainly geometric design. Some of the geometric elements can be traced back to earlier phases. All in all, however, this phase marks the end of the Nasca Style and its design canon. For this reason it is adequate to talk of the Loro Style instead of Nasca phase 8. Due to the absence of complex design themes a detailed analysis of design features does not promise good results. Instead, the combination of shape, certain single design themes and the overall surface treatment are the main clues in identifying Loro Style pottery.
A brief characterization of Loro pottery is given by Strong (1957: 40):

> The vessels characteristically have a buff or orange colored background (Loro Polychrome Fine and Loro Polychrome). Some white backgrounds also occur occasionally. […] Slipped red backgrounds (Tunga Polychrome Fine) are also occasionally found. These vessels often have a chevron-band or bar and dot designs, thus seemingly anticipating the Coast Tiahuanaco style. […] Unique to the Huaca del Loro style is an organic black pigment, used either as an overall slip to cover the

undecorated parts of the vessel or to create simple dot designs (Loro Reserve Painted). This black paint is fugitive, and was applied after the original firing of the vessel. […] Loro Polychrome Fine and Loro Polychrome designs are characteristically arranged in either horizontal bands or in medallion-like circular or rectangular units. Interior decorated bowls are particularly characteristic of Loro Polychrome. The most diagnostic designs are a series of stylized, curvilinear demons or deity figures, in part derivable from Late Nazca (B) motifs. Trophy heads and rows of human faces are clearly related to Late Nazca (B) motifs, Geometric designs including zigzags, circles, stepped blocks, frets, diamonds, crosses, and so on, are commonly depicted.

The description is not very detailed, but together with the available illustrations of Nasca 8 pottery (Fig. 21) this style can easily be identified, as it differs markedly from the preceding Nasca phases.

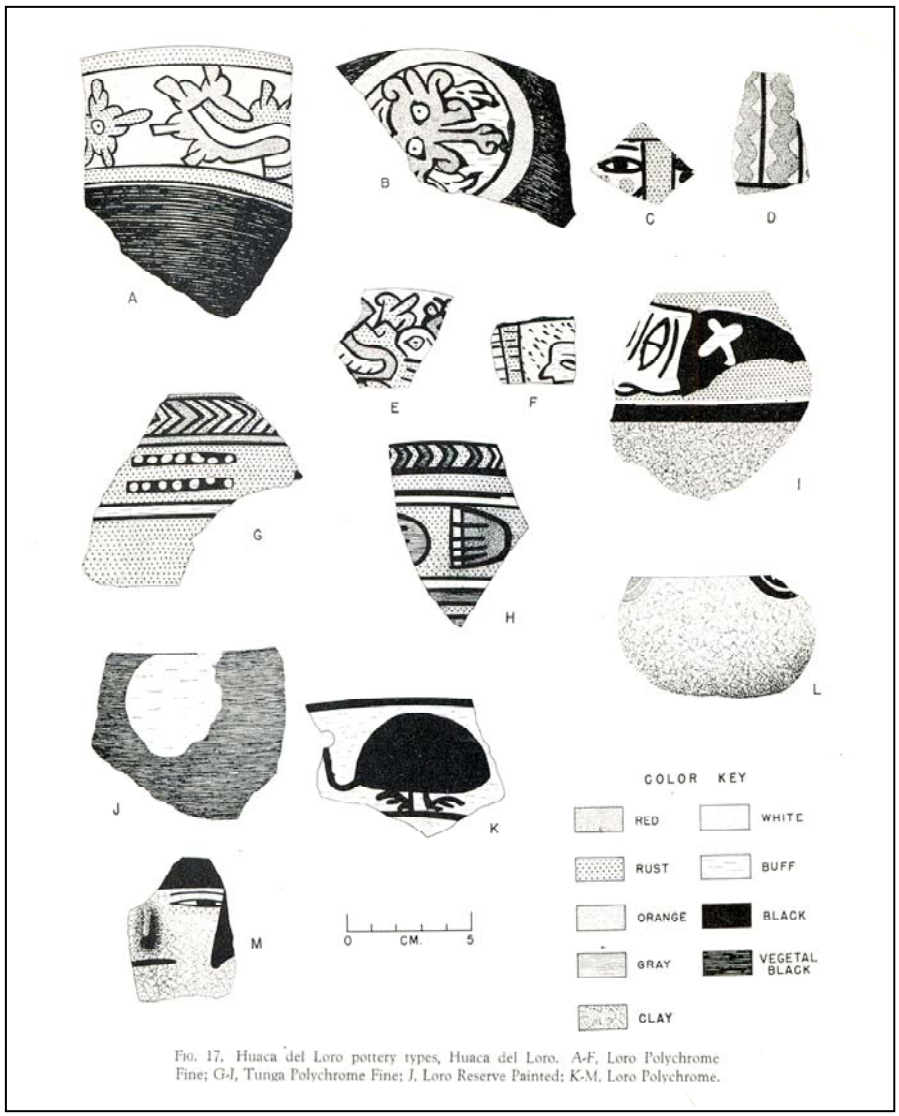


FIG. 17. Huaca del Loro pottery types, Huaca del Loro. *A-F*, Loro Polychrome Fine; *G-I*, Tunga Polychrome Fine; *J*, Loro Reserve Painted; *K-M*, Loro Polychrome.

Fig. 21: Huaca del Loro pottery types/Nasca 8 (Strong 1957: Fig. 17)

A.5.2.8.2 Nasca 8 Shapes

Loro shapes are a continuation of late Nasca 7 shapes. Wegner gives a good summary of shape development:

> Relatively little shape change takes place during Nasca 8. Roundedness and simplicity of contour are pervasive characteristics. The very rounded vessels, such as the Spheroidal Jars and Hemispheroidal Bowls, do not result from any readily discernible trend, unless the roundedness is somehow related to the development of body globularity in the face-neck Bottles of late Nasca 7 and Nasca 8. This fairly sudden appearance may be due to a deficiency in the sample, but cannot rule out the possibility of the introduction of stimulus from outside the Nasca area. Face-neck Bottles exhibit the greater amount of variation. A handle is added and modelling takes diverse forms. Recurved bowls and Cups may be new shapes arising in Nasca 8. The Single-Spout Bottle, Collared Jar, Conical-bottomed Vase, and Flaring Bowl are no longer produced by the end of the phase (Wegner 1975:36-37)

The type shapes are depicted in Wegner's manuscript. By this the shapes are sufficiently defined. The major problem is again the exact limitation in relation to the adjacent phase. The changes in pottery shape from N7 to N8 are minor and especially hard to detect when dealing with fragmented pottery.

A.5.2.9 Nasca 9

Nasca 9 is not considered a Nasca Style and has not been included in this study. Menzel (1964) still distinguishes Nasca 9 as a coastal Style and Chakipampa as a highland style. Differences defined by Menzel are indeed so few that today both styles are regarded as one, named Chakipampa.

A.5.3 Critical assessment of the Dawson sequence

The Dawson Seriation became the most widely accepted system for classifying and chronological ordering of Nasca ceramics. The scheme has also been applied by the Archaeological Project Nasca-Palpa. As mentioned above, while being one of the most thorough chronological schemes known in Andean archaeology, fieldwork of the last 30 years has shown the deficiencies of the system and the need for independent revision (Silverman 1993; Silverman/Proulx 2002; Orefici/Drusini 2003; Proulx 2006), and it were just these deficiencies that have lead to the present study.

There are several theoretic sources for errors within the seriation, inherent in its methodology, in the database and in the application. Some of these may be general problems of relative chronology, others might be solved. In order to exclude at least some of these errors with the elaboration of the Palpa sequence it is necessary to be aware of them.

1) The database has to be revised to show up the parts of the sequence that are not sufficiently substantiated by the known archaeological contexts. Therefore the distribution of pottery has to be presented by phase and valley provenience to account for the possible regional differences in Nasca pottery. The main problem is that some of the phases are underrepresented in the archaeological record. It might be wise to

redefine some phases for easier and sounder archaeological information. These aspects will be treated later when discussing the Palpa data in comparison with finds from other valleys.

2) There is a severe lack of comprehensibility from the available literature. Without a complete publication the implementation of the Seriation depends strongly on the researcher's background. There exist several theoretical sources for comprehending Dawson's Seriation and his definition of phases. The most direct way was the personal instruction by Dawson himself. Other means are a study of available literature, the study of published and unpublished collections and the knowledge of archaeological contexts and associations through field experience. However, not all researchers will have equal access to all of these sources so their individual definition of the Dawson phases may differ somehow. A fixed standard in form of a complete publication does not exist. Comprehensibility is additionally hindered by the multitude of features that exist. The variation of themes and features is such that a rough phase assignment is often possible but the exact classing of a vessel may become difficult, when just the features in question have not been mentioned or illustrated by any author. Because of this the application of the sequence becomes a matter of intuition. The result is the ongoing discussion of specific phasing of pottery or even of the existence of some of the phases.
As argued above, in some instances the transition from one phase to another has not sufficiently been defined. Clear cut of points have been mentioned only for the transition from N3 to N4 and from N5 to N6, and in case of the N5-N6 transition mainly for mythical themes. Consequently, many phase assignments will be only tentative. Eisleb (1977: 11) states that there is some disagreement regarding the definition of phase Nasca 4 to 6 as seen in Proulx (1968; 1970), Roark (1965) and Rowe (1974).
Additional to these unclear definitions of phases there are indicators that some phases are partially contemporaneous and therefore would require a new definition. Rowe (1956) mentions that Nasca 4 and 5 seem contemporaneous.
Equally discussed is the organization of the phases in larger periods. Proulx (1968; 1970) considers Nasca 4 an Early Nasca phase, as he observes the gradual changes from Nasca 3 to Nasca 4 in the cemeteries of Ocucaje. On the other hand, Orefici (Orefici/Drusini 2003) conclude from the end of building activity at Cahuachi after phase N3 that N4 already is part of the Middle Nasca period. In Palpa N4 also appears to be clearly Middle Nasca related.
The catalogue of pottery from Palpa will hopefully contribute to a better definition of Nasca phases, though considering the complexity of the style much more work will be necessary.

3) The classification works best with the maximum number of features taken into account. However, the archaeological praxis is the need to define a pottery fragment with only one or two features preserved. In case of shape, the total proportions of a fragmented vessel are never known. The scheme works quite well for complete vessels, but for sherds it depends strongly on the observable features. In applying the seriation to fragmented pottery from excavation or surface collections the problem consists of the fact that the chronological position of an artifact is not defined by a single feature but by a certain combination of features. The more features observable on a pottery sherd (decoration and shape) the more secure is its chronological placement. The only way

out of this dilemma is not to rely on dating based on isolated sherds. However, a number of fragments from a stratigraphic layer should provide a secure chronological placement.

4) Pottery investigated to establish the sequence comes mainly from burials. Therefore the chronology is principally a burial chronology, which is applied to materials from settlements. The chronological distribution of features in materials associated to architecture/settlements might be slightly different. In the present study which focuses principally on settlements the chronological information derived from these different evidences can be compared.

5) "*The seriation only provides a chronologic ordering of the phases, not their definition*" (Rowe 1960: 41). Through this statement Rowe makes the principal problem with the seriation explicit: The phases do exist stylistically, but their delimitation does not coincide with the data from settlement excavations so that a meaningful interpretation of the succession of phases, their distribution and the correlation of the development of style and settlement is hindered. A redefinition of the phases based on archaeological evidences would help.

6) As mentioned above (Introduction), the stylistic definition rests on little stratigraphic evidence. Stratigraphic information is primary chronological data, unlike the burials that are unrelated moments of time, linked only through stylistic similarity.

7) The functional dimension of pottery use is excluded from the discussion. Generally there is agreement about that there are no major functional differences (Carmichael 1988). The analysis of a large sample pottery from settlements will help to clarify this aspect.

8) Regional differences were negated while elaborating the Dawson sequence (Rowe 1960). The possibility of such differences puts in doubt the complete sequence. Several studies indicate that regional differences exist (Blagg 1975; Orefici/Drusini 2003; Proulx 1968; Silverman 1993). The description of a regional pottery sample from Palpa will provide important data in this discussion.

9) The shape classification is not systematic for all phases and it includes design traits for the definition of traits. Also the terminology is sometimes problematic as it refers to different aspects of the vessel: Round bottom Bowl –Bottom; Flaring Bowl – orientation of the Wall; Cup Bowl – vessel proportion, Vase or Jar – depending sometimes on decoration. This highlights the lack of system in the approach.

A further problem is that the shape classification was not designed to be applied to fragmented pottery. Therefore there is no standard of classing fragmented Nasca pottery from excavations.

A.6 Palpa pottery analysis and the previous research

After revising previous approaches to the analysis of Nasca pottery it can be decided to what extent parts of these approaches can be adapted for the analysis of the Nasca pottery from Palpa.

The most important approach is the Dawson sequence because it provides the chronology in use by most researchers, including the beginning of the Palpa project.
As the above considerations suggest, the Dawson sequence is on one hand a thorough and extremely detailed scheme based on a large corpus. On the other hand, the number of theoretical sources of error identified and the problems obvious in praxis are reason enough to test the sequence. The way of testing chosen in the present study is by establishing an independent chronological framework, based on a new and geographically homogeneous sample of Nasca pottery from Palpa.
However, some parts of the Dawson approach will be integrated into the present analysis:

The classification scheme developed by Dawson and finally going back to the pioneering studies of Seler (1923) will be used for **classification of the decoration** of the Palpa pottery. The definition of themes and features and the concrete classification of a given design element within this terminology has no direct chronological connotation. This chronological connotation has been added by Dawson in a second step, the chronological analysis, by observation of the burial associations and of stylistic similarity. It is this chronological connotation of the Dawson phases that will be abandoned in the present study, but the terminology and the taxonomy will be applied to the classification of decoration.
In this sense, the comparison of the Palpa pottery with materials from other valleys is facilitated by the use of the same terminology. But, in the present study a **phase assignation** – e.g. Nasca 4 pottery – **always refers to the stylistic characteristics** of the pottery defined as Nasca 4. In this context, phase is homonymous with style-phase. The chronological placement of the features and themes observed in Palpa in the sequence will be independently assessed. The objective of the chronological analysis of the pottery from Palpa is not to detect the themes and features characteristic for the Dawson phases, but to register the themes and features present. The chronological interpretation will be done in an independent step, regarding the stratigraphic information (see Chapter B.4).
One important aspect in the chronological analysis is the concept of distinct traits (Proulx 1968). These are traits (shape or decoration) that feature remarked changes, as contrasted with those traits that remain stable over a longer period.

The **shape classification** of the Dawson sequence will not be adapted, because it is designed to the classification of complete vessels.
The approaches by Silverman (1993) and Vaughn (2000) show how a reduced shape classification may be applied. The Blasco and Ramos (1980) classification also convinces by their reduced scheme differentiating some basic shapes and within each shape category a series of subcategories. Another very useful aspect of their approach is the classification of subcategories by wall shape and orientation. This has been partially integrated in all classifications (e.g. flaring bowl). For the classification of fragmented pottery Vaughn (2000) applied this criterion to the definition of major shape categories (convex bowl, straight bowl). However, he made parallel use of vessel proportion for some shapes (flaring bowl 2, cup bowl, very deep bottom bowl). In the Palpa

classification wall shape and orientation will be used for classification in a more systematic way.
Of the remaining approaches the methodologies will not be explicitly applied to the Palpa classification.

B The Nasca Pottery from Palpa

B.1 Area of study

The area surveyed by the Archaeological Project Palpa comprises the Valley of Río Grande, Río Palpa and Río Viscas. The lower limitation is at the confluence of Río Grande with Río Ingenio. As the project's fieldwork is going on, the upper limitation of the survey area is being expanded continuously, with some areas surveyed at about 4000 meters.

For the purpose of the present study pottery data has been documented from few sites only. In the Río Grande Valley the sites Parasmarca, Estaquería, Los Molinos, La Muña and PAP 78 (see Map 2).

B.2 Field methods

Excavations have proceeded by natural layers, each layer being assigned during excavation with a feature number (*rasgo*). Additionally feature numbers have been assigned to other characteristic evidences such as pits, hearths, walls, lenses of different soil composition or other alterations of the sediment. Later in the laboratory this account has been revised and stratigraphically interpreted sometimes resulting in the grouping of several features under one single number. The stratigraphic layers have been assigned with capital letters *S* for surface layer and layers *A-X* from the most recent to the earliest.

Previous pottery analysis within the Palpa Project has been realized applying the Dawson sequence. However, due to the problems observed (see Introduction; chapter A.5.3), for the tasks of site dating and settlement pattern analysis adjacent Dawson phases have been lumped according to their association in the archaeological record. This procedure resulted in a reduced system of 4 Periods used and further refined within the present study (see also Tables 1, 3, and 31).

Period	Dawson Phases
Late Nasca	Nasca 6/7
Middle Nasca	Nasca 4/5
Early Nasca	Nasca 2/3
Initial Nasca	Ocucaje 10/Nasca 1

B.3 The archaeological context: pottery provenience

Pottery for the analysis comes from stratified deposits from settlements. These are floors, surfaces of use, constructive fillings, refuse deposits, as well as natural sediments caused by eolic or fluvial activity, or by collapse of walls. Other means of formation of deposits is the later modification or disturbance for example through looting activity. The advantage of stratified deposits is that their formation process implies a chronological sequence (Harris 1989).

Due to the multitude of units which have been excavated at several sites in Palpa during the last ten years, for purposes of this study a selection of cuts has been made that are

thought to best meet the requirements for stratigraphic analysis. The criteria for selection were: 1) the undisturbed nature of the deposit; 2) the superposition of several layers in one architectural unit. Additional criteria were the presence of a large quantity of fragments and the preliminary recognition of a sequence of several phases. The selection of contexts provides a representative account of Nasca style pottery in Palpa. However, it is possible that a larger database would refine the results in some aspects.

A choice of well suited contexts from the units of excavation listed in Table 12 form the study sample used for stratigraphic analysis[1]. Each excavation unit can include various architectural units, i.e. a unit not divided by transversal walls. These are the units important for stratigraphic analysis. In the case of larger excavation units, not all architectural units have necessarily been documented. The description of the architectural units analyzed in this study is presented in Appendix 1. A description of individual features, such as layers of constructive filling, floors, or sediment is included. It is limited to the basic interpretation of the architectural features. The schematic presentation of the stratigraphies (Harris Matrix) can be seen in Appendix 2. The complete account of context descriptions including soil colors, associated materials etc. is accessible through the annual reports of fieldwork given to the INC. These details are not important to the objectives of the present study.
For site location see Map 2.

Site	Excavation Unit	Year of excavation	Epoch
PAP 73 Estaquería	Unit 1	1997	Initial Nasca
PAP 93 Los Molinos	Sector A, Unit 1	1998	Early Nasca
	Sector A, Unit 2	1998	
	Sector A, Unit 3	1998	
	Sector B, Unit 5-24	1998, 1999	
PAP 78	TP2 TP3	2000 2000	Middle Nasca
PAP 79 La Muña	Sector A, TP8 Sector A, Unit 8	2000 1999	Middle Nasca
PAP 196 Parasmarca	TP 1 TP 4 TP 5 TP 6 Unit 1 Unit 2 Unit 3 Unit 5 Unit 6 Unit 8 Unit 9	2001 2006 2006 2006 2006 2006 2006 2006 2006 2006 2006	Late Nasca

Table 12: Palpa contexts included in the stratigraphic analysis

[1] Some additional pottery from minor context is also included in the database, but has not been included in the stratigraphic analysis. It has been decided at an advanced moment of the study which stratigraphies would produce well interpretable patterns. However, the additional fragments have been left in the database and are included in the statistic counts of shape and decoration, in order to provide a larger sample.

B.4 Method of pottery analysis

The analysis of Nasca pottery from Palpa presented in this study comprises two different, but interrelated steps: 1) the **classification** of pottery shapes, designs, and fabrics, and 2) the **chronological analysis** consisting of observation of stratigraphic information and stylistic or morphological comparison of the pottery classified before. In the following chapters the methodology applied to the classification and further chronological analysis of the Nasca pottery from Palpa will be presented.

B.4.1 Method of classification

Classification and typology are essentially, means for systematic ordering of a large corpus of objects. Through taxonomic ordering, differences and their systematic become observable. The classification or **systematic presentation** of fabrics, shapes and designs registered in Palpa has the objective of ordering the vast amount of material in **comparable units**.

Several methodological approaches to the classification of archaeological pottery are known in theory (e.g. Karstens 1994; Rice 1987; Shepard 1956) and in practice (e.g. Paap 2002; Ulbert 1994; Vallo 2000; Wetter 2005). There is no standard method, but whichever method has to be shaped according to the characteristics of the specific pottery assemblage to be classified and the aims and questions underlying the study.

The pottery used for the present analysis comes from settlement contexts and as such it is typically fragmented. The information extractable from fragmented pottery differs slightly from that of complete vessels; therefore well established classification models based on complete pottery are not necessarily applicable to a sample of sherds. Previous attempts to classify fragmented Nasca pottery have been resumed in Section A of this study and the possibility of integrating parts of their methodology has been assessed (A.6).

The study aims at chronology or more concretely, at establishing a relative sequence of changes in traits of shape, design and fabric. Therefore the classification has to be defined not only to integrate the largest possible amount of pottery, but also to reflect the occurring temporal differences wherever possible.

With this objective the classification will proceed in two steps: 1) The systematic classification in previously defined categories; and 2) the definition of subcategories, now additionally taking into account the distributional pattern of traits as observed in the horizontal stratigraphy. By this, the subcategories can be defined as best to reflect the temporal changes.

The concrete procedure differs for classification of shape and decoration and will be treated separately in the following chapters.

B.4.1.1 Shapes

According to several authors (Proulx 1968, Silverman 1993; Vaughn 2000) Nasca pottery is characterized by some basic shapes and their variations. The basic shapes defined are (cf. Figs 1, 2):

Bowls
Vases/Neckless jars
Necked jars
Bottles

Most authors include a *miscellaneous* category. Vessels in this category tend to be variation of the *bottles* and *necked jars* categories. Silverman proposes the category *musical instruments*.
Within these categories, there is a multitude of possible subcategories (Kroeber/Collier 1998; Blasco/Ramos 1980), some having chronological significance by being restricted to a certain short time span, others constituting subtypes that can be traced over a longer period.

Traditionally these categories have been defined by vessel proportion. Most important for the distinction is the main index. By this, bowls can be classed as low shapes that are wider than they are tall, and vases as high shapes that are taller than they are wide Roark 1965: 5). Also further subdivisions are possible on basis of this criterion (Blasco/Ramos 1980; Proulx 1968; Wegner 1975).
It is obvious that on fragmented pottery the diameter/height proportion or main index is not applicable, because the absolute vessel height is nearly always uncertain. An absolute vessel height can be determined for very few fragments only. Of the fragments used for this analysis only about 0.5% belongs to archaeologically complete vessels with a determinable height. Therefore it is necessary to search for other criteria to describe the fragmented pottery.

A classification by shape and orientation of the rim fragment promises best results for describing Nasca pottery. The method had been previously applied by other authors for classifying Nasca pottery, but the approach had always been combined with classification by vessel proportion (Proulx 1968, Roark 1965 Wegner 1975). Blasco and Ramos (1980) did use these categories more systematically to define subcategories, but their main categories are based entirely on vessel proportion. Vaughn also applied the criteria of wall shape to his assemblage of fragmented pottery from Marcaya, but he also included the criterion of vessel proportion and the total number of shapes is smaller than in the present analysis because Vaughn analyzed a temporal homogeneous sample from one single phase. Consequently, none of the classification systems can be directly applied to the Palpa sample. The method to be applied in this study has to be newly defined.

By classing according to rim shape and orientation it is important first to differentiate between necked and neckless vessels. Then, the rim fragments can be classed according to their shape (convex – straight – concave) and orientation (insloping – vertical – flaring). In case of the neckless vessels the vessel wall is described, while for the necked vessels the neck of the vessel is described.

B.4.1.1.1 Taxonomy of shapes

The classification of the Nasca pottery assemblage from Palpa proceeds in the following steps (Table 13):

1. **Presence/absence of a neck** — ***Necked – Neckless – Undefined***
2. **Wall orientation:** — ***Insloping – Vertical - Flaring***
3. **Wall shape** — ***Convex – Straight - Concave***

At the highest taxonomic level there is the distinction of **necked** and **neckless** vessels. At a second level, each of these categories has been divided into 9 classes according to the **orientation** and **shape** of the rim fragment, representing the wall or the neck of the vessel. The presentation of the material is uniform for these first two levels and results in a definition of 18 shape classes. Fragments that can not be classed in any of the observed aspects will be assigned as unknown in the respective aspect. Together with the auxiliary category "unknown" there is a total of theoretically 30 analytical units. But, fragments within the unknown category (for example body sherds) are not significant to the analysis of shapes.

So far, this morphologic classification of fragments is simple and in most cases unambiguous. It helps to structure the amount of data and to class a maximum quantity of rim-sherds. Only in some instances might it be difficult to decide whether a fragment convex or concave curved, or rather straight. Also, the convex and concave shapes are not always easily categorized as to orientation, because the orientation varies along the curved wall. The straight and vertical categories constitute the break point in the convex-concave and flaring-insloping continuum. At this point of the classification certain subjectivity cannot be excluded. However the disturbance of the pattern by few cases of ambiguous classification has to be seen in relation to the use of defining 18 fragment shape classes that can serve as a basis for further comparison of the material.

It is important to be aware that these classes are **fragment-shape classes** and not vessel shape classes. Each of the 18 fragment shape-classes can be diagnostic for several vessel shape classes. Vessel shape classes as known from complete pottery classification require considering the vessel proportions. To a certain degree this will be achieved by the following step, the ordering of the material in subcategories. The decision of first classing according to rim shape and orientation allowed integrating nearly all rim fragments in the classification. For the following step only fragments that preserve at least the largest part of the vessel wall can be reliably classed.

B.4.1.1.2 Subcategories of shape

Further comparison of shapes helps to define smaller subcategories that are more subtle to temporal changes. However, no clear cut classificatory boundaries can be defined for the definition of subcategories as it has been possible with wall shape and orientation. Consequently, the subcategories are to be conceived of as weak categories with sometimes gradual flowing boundaries. Despite of the problem of intermediate shapes

that will be hard to be categorized there is a specific use in the definition of these subcategories: this is linking the classification to previous classifications of complete pottery for comparison.
There is a series of shape criteria that can be described and that might serve to define subcategories. But only few of these criteria can be measured in an objective way thereby impeding the definition of hard shape classes. The most characteristic shape details observable on fragmented pottery are listed below. The subcategories established on the basis of one or more of the criteria given below can then be linked to the established shape classes (Blasco /Ramos 1980; Kroeber/Collier 1998; Proulx 1968, Roark 1965; Wegner 1975).

- Degree of wall inclination
- Rim diameter
- Rim orientation
- Rim shape
- Base shape
- Base angle
- Wall height (estimated)
    - low
    - medium high
    - high

The **degree of wall inclination** is a criterion complementary to the wall orientation. The vertical wall has been defined as 0° inclination. In relation to this vertical axis, insloping inclination or flaring inclination can be measured at 5° intervals. This criterion constitutes a specifically diagnostic aspect of Nasca vessel shapes easily observable on fragmented pottery. For classification of complete pottery this argument can be replaced by the rim-base-diameter ratio. It is a criterion that has clearly a chronological connotation (see B.5.1).
There is some difficulty in the exact determination of the inclination of an irregular curved object and some inaccuracies cannot be excluded. It is also obvious that the differences in wall inclination of different shapes are gradual. Therefore wall inclination has been measured in 5° intervals. The formation of subclasses will comprise even larger units and the boundaries have to be regarded as flowing. The objective is to show trends of wall inclination and not to define exactly the inclination of the walls. In fact, this measure resembles the step of ordering the profile drawings by similarity. The criterion is useful for a further subdivision of the large corpus.

The **rim diameter** can be measured on most rim fragments. It provides important information on vessel proportion, but only when being set in relation o the vessel height, providing the main index. But, as the vessel height is generally unknown in case of fragmented pottery, the rim diameter looses importance. There is a tendency that large diameters belong to bowl shapes while small diameters belong to vase shapes. However, shape differences are gradual and of a given shape miniatures or extraordinary large vessels occur. Shape interferences occur especially in the intermediate sphere of diameters ranging from about 14cm to 18 cm. Therefore the rim

diameter is important extra information for further subdivision of the sample, but it will not necessarily help to secure classing of fragments.

The **rim orientation** differs in some instances slightly from the wall orientation. But the rim is generally a direct rim that is not separated by a pronounced break. Therefore the rim-section is hard to define. It is the direct prolongation of the wall shape and orientation, as for example in the case of concave flaring walls. It is often a matter of subjective interpretation if the rim shows a characteristic orientation or if it is the orientation of the wall. Therefore this criterion is considered one of the minor additional criteria.

The **rim shape** is not diagnostic on most Nasca vessels. It is generally rounded, sometimes slightly flattened on top, but it is obvious that the potters did not pay much attention to the elaboration of the rim. Nevertheless, the rim shape has been documented as minor criterion to see if there is some coincidence with specific shape classes or chronology.

The **base break** is a diagnostic characteristic on some vessel shapes, but on fragmented pottery it is rarely preserved. When preserved it is often a subjective interpretation if it is pronounced or not. However, pronounced base angles have been identified as important diagnostics for some early and late shapes (see section A) and therefore cannot be neglected in the present analysis. Again, the use of defining this criterion has to be compared to the threat of ambiguous classing of some fragments.

The **base shape** is mostly unknown. Complete vessels show that Nasca vessel bases can be rounded with considerable differences in depth, to the extreme of a deep conical bottom. Other bases are slightly rounded or lens shaped. Because of the difficulties of preservation this is a minor criterion for classification.

The **estimated wall height** is a criterion applicable, in some cases, to replace the information about the absolute vessel height. It provides no absolute measure, but in some cases it is obvious that the complete wall height is preserved. It can be related to the rim diameter. This criterion helps principally to subdivide the bowl category in low bowls, medium deep bowls, and deep bowls. However, a clear cut definition is not possible, because the wall height is no absolute measure like the vessel height is. The wall height can be estimated when a base break is present. As this is not clearly pronounced on all vessels, it is obvious that information about the wall height has to be considered with care. In some instances the iconography might help to define the vessel wall, because on many Nasca vessels the painted area is restricted to the visible part of the wall.
The relative wall height can approximately be calculated as a wall-rim proportion and is defined here. The definition gaps reflect the gradual character of these categories. Note that no fix boundaries have been defined, because the wall height is no absolute measure:

High:	wall height $\geq$1/2 Ø
Medium:	wall height =1/3-1/5 Ø
Low:	wall height $\leq$1/6 Ø

B.4.1.2 Decoration

As in the case of shape, in the classification of design on the basis of fragmented pottery, there are some difficulties and specific requirements not present in the analysis of complete pottery. In design classification the fragmentary status of the material will present difficulties in recognition of the complete design. Therefore a reconstruction and interpretation of iconography only on basis of fragmented pottery is a difficult task. Shapes can be at least partially reconstructed from the rim fragment, present on every vessel. For decoration there is no such concrete element shared by all decorated vessels. For classification of a complex iconography it is best to rely on an established classification.

For the present study, the Dawson classification of Nasca iconography will be used, because it is the most thorough approach so far. The Dawson approach is especially useful because of its structure that describes the design at different taxonomic levels (Rowe 1960, Roark 1965). An additional use of applying this classification is the possibility of later comparison of the results of this study.

In the analysis of complete Nasca pottery the existence of a limited number of design **themes** is apparent (Clados 2001; Proulx 2006; Seler 1923). The representation of these themes follows a certain standardized iconographic canon. The themes can be analytically split up in smaller units called **components** and the smallest units called **features**. A feature describes a way a component is represented. Themes and components are interpretable and meaningful units, whereas the features provide information on geometric shape, spatial relation or color, used to describe the components and themes (cf. A.5.1).

A concrete example illustrates this taxonomy (Plate 63): A series of fragments is illustrated, all representing a bird, generally interpreted as a duck (Proulx 2006: 133). The components are *beak*, *eye*, *neck,* etc. On the feature level the component beak can be described as *linear*, *U-shaped*, *red*, *humped*; the neck is *curved*, the eye is *not joined with the head* etc.

Now, for the documentation of fragmented pottery the logic of the theme – component – feature taxonomy is inverted. The feature represents the smallest iconographic unit and it is the one most likely to be preserved on a small fragmented pottery sherd. It can be documented without knowing the concrete representational theme it is part of, for example classed as a *U-shaped red line*. The next interpretive level is the component. Again, it is possible to describe components with their respective features without exactly knowing the original theme. Only if a characteristic combination of features and components is preserved, the theme can be reconstructed. However, it is unlikely to be able to determine a concrete subcategory of a theme like those defined in complete pottery classification (Clados 2001; Proulx 1968, 2006; Roark 1965; Wegner 1976). By proceeding to class the decoration this way, most decorated fragments can be integrated within the same classification system. This helps to provide statistic counts of background color, rim decoration, design outlining or other traits independent from the identification of an iconographic theme. However, when the classification is used for dating purposes, dating is more accurate, the more details are preserved. Therefore the chronological analysis included in this study will concentrate upon the fragments that permit the reconstruction of a concrete iconographic theme.

The arrangement of illustrations on the plates included in this study is structured by iconographic theme. Subcategories or variations of themes are defined in basis of specific component feature combinations and constitute the second level of ordering. In a final step, these subcategories will be arranged according to the pattern of temporal distribution as observable in the horizontal stratigraphy (see below).

B.4.1.3 Fabrics

During the process of revising, drawing, and photographing of the material, a macroscopic analysis of fabrics has been done for all fragments in the sample. The objective of this analysis was to detect possible differences in the manufacturing process or in the raw material (paste). Such differences can be temporally significant just as differences in decoration and shape can be. Additionally, marked differences in the raw material directly imply the use of different sources of paste. This could provide an important argument with regard to the regional differences of pottery.
In accordance with the descriptive standards for fabrics in pottery analysis (Bauer et al. 1987; Rice 1987; Shepard 1956) the observed criteria are:

- Temper
- Color of the paste
- Hardness
- Paste texture
- Surface texture

With the aim of detecting possible differences in the paste that are not detectable by the eye, a small but variate sample of 27 fragments has been selected for a mineralogical and compositional analysis at the Ruhr-Universität Bochum. This detailed analysis included thin section, X-ray diffraction, and ICP-OES of all 27 fragments. Through this an objective compositional comparison of these fragments has been possible.
The results of the analysis of fabrics will be presented and discussed below.

B.4.2 Chronological analysis

The chronological analysis of archaeological pottery is based on the fact that some differences in pottery are time related (Rowe 1961). If we can find out which traits change over time and what is the pattern of change, a relative dating of pottery is possible. But, time differences are not the only differences in pottery. Other differences like regional, workshop related, or functional differences can also occur and make it difficult to identify the temporal significant differences. Additional information in form of the pottery context and stratigraphic information is needed to prove the chronological nature of changes. For the present sample two kinds of argument can be used: **horizontal stratigraphy** and **vertical stratigraphy**.

B.4.2.1 Horizontal stratigraphy

Horizontal stratigraphy is the spatial distributional pattern of temporal distinct finds (Eggers 1959: 83). Previous pottery analysis and the existing chronological framework indicate that the sites included in the study are principally single occupation sites. The

main architectural structures are clearly associated with one of the four Nasca periods defined for the Palpa area (Table 3). The pottery excavated at the four sites features clear differences that can be easily defined and chronologically interpreted. The components from other epochs at each site are easily identifiable as minor components that can be explained chronologically. These will be traced in the analysis of vertical stratigraphy (see below).

Taking all the levels from **Estaquería** together we have a representative sample from what is presumed to be Initial Nasca. Shapes and design elements defined at Estaquería differ to some degree from those of later periods, i.e. other sites.

In the same way, the materials from **Los Molinos** form a stylistic block that is clearly Early Nasca related. However, here it is important to correlate the features with the stratigraphic layer where they are found, because in the uppermost layers from Los Molinos some Middle Nasca pottery has been documented. This is distinguishable when compared with the lower layers and it is comparable to the material from La Muña.

La Muña is a Middle Nasca site that is stylistically also very homogeneous. In the contexts used for the present analysis Middle Nasca pottery is the only component. **PAP 78** is also clearly Middle Nasca related. Only the lowest layers are of Early Nasca origin, according to the pottery found. Both sites together provide a full sequence of Middle Nasca pottery in Palpa.

The principal component observed at **Parasmarca** is Late Nasca. However, this stylistically well definable pottery is found in association with Initial Nasca and Middle Nasca pottery. Obviously these contexts are mixed, but the earlier pottery can clearly be identified as a minor component. For identification of earlier traits, the material can be compared to the samples from La Muña and Estaquería.

The interpretation of this specific temporal distribution of traits among the sites in terms of horizontal stratigraphy permits the direct identification of shapes or decorations temporally restricted to one of the periods. By this, four temporally rather homogenous samples representing the four settlement periods can be described. Each of these samples can be expected to include the most important shapes and decorations of the respective period. Before entering in the detail of vertical stratigraphy, the shapes and designs can already be arranged according to their temporal context. The procedure starts with the classification of shapes and designs in fragment shape classes and iconographic themes and the further subdivision in subcategories.
On the illustration plates the subcategories are arranged according to the horizontal stratigraphy and therefore offer a good overview of the shape and decoration inventories of each of the four major periods.

B.4.2.2 Vertical stratigraphy

The second step of chronological analysis is **vertical stratigraphy**. This has two purposes: First, the relative sequence of Initial, Early, Middle and Late Nasca can be proved. In fact it has already been proved before, but an independent proof for Palpa is

easily done and provides a better foundation to any further argument. Now, the shape and design traits identified as characteristic for one of these periods can be traced in the vertical stratigraphy. A superposition of main periods can be observed in several instances and will be presented below in the discussion of stratigraphy.

Second, the possibility of defining further subphases on basis of the vertical stratigraphy has to be assessed. This search for further patterns of change beyond the level of major settlement periods represents the most detailed level of stratigraphic analysis; it is based on the observation of vertical stratigraphy. The objective of this analytical step is to make chronological distinctions as fine as possible. Especially for the Early and Middle Nasca period there are deep stratigraphies with hundreds of documented fragments that might allow a comparison of shape and decorative traits throughout the sequence. It has to be assessed to what degree minor stylistic variations on the feature level can serve to sustain the definition of subphases.

B.4.2.2.1 Principals of stratigraphy

The analysis of vertical stratigraphy is based on the principles of **association of findings** and their **superposition**. The principles underlying archaeological stratigraphy have been demonstrated in detail (Harris 1989). Generally, findings found in one layer of a stratigraphy can be interpreted as in use at the same time, while the superposition of contexts and their associated findings defines a sequence.

The associations of findings were documented during excavation and all fragments from the same stratigraphic layer received the same number of *rasgo* (excavation feature). By this, the stratigraphically contemporaneous fragments can easily be filtered out in the electronic database. There is one severe threat to the correct interpretation of association of findings: the possibility of mixing with materials from earlier periods. To a certain degree mixing may occur in all contexts. This may be in form of heirlooms, older pottery with an atypically prolonged lifespan, but also due to the use of soil from earlier residues for construction. For simple relative dating of the complete context the youngest findings provide a terminus post quem. For the description of a comparative inventory of materials in use at the same time it is important to identify all materials: The identification depends on the comparison of a broad database where earlier materials can be expected to constitute a minor component.
Surface layers in most cases contain mixed material, deposited only recently as a result of grave looting. But, the quantities of surface pottery are often high, providing a large amount of pottery for comparable analysis. Thus, in some instances, surface material has been documented for the study, to provide more examples of shapes and designs from the Palpa area. But, surface pottery has not been included in the analysis of vertical stratigraphy. It serves for horizontal stratigraphy, being defined as pottery with secure local provenience that can be compared to the pottery from stratigraphic contexts.
In the case of reuse of settlement sites for funeral purposes the superposition of burials intruding the older settlement structures is usually clearly recognizable. This case provides a clear superposition of artifacts from different epochs and is therefore very valuable for chronological interpretation.

The superposition of contexts has been documented during excavation (see B.2). The stratigraphic relations have been entered in a Harris Matrix computer program (ArchEd 1.4.2). A Harris Matrix for each of the contexts analyzed here is provided in Appendix 2. A Harris Matrix graphic representation of the existing stratigraphic relations: *earlier, later* and *equal*/contemporaneous (Harris 1989). The graph helps to find out direct superposition of contexts, but also indirect superposition of stratigraphically not directly related contexts. This helps in some cases of complex stratigraphy to augment the number of stratigraphically comparable fragments.

Some stratigraphies provide very little comparable material for stratigraphic analysis. In these cases the stratigraphic analysis has been reduced to a general comparison of upper and lower layers. Details of this procedure will be explained below (chapter C.1)

B.4.2.2.2 Chronological interpretation

Pottery occurrence in the stratigraphies has been checked according to its presence in the respective context. Quantitative counts as a basis for relative dating have been omitted due to the necessity of a representative sample size. The sample size from Palpa is such that frequent shapes or iconographic themes are sufficiently represented. But, others occur as rare or unique traits in the Palpa sample and therefore lack a database for stratigraphic comparison.
The discussion of stratigraphy has to concentrate upon those traits present in a number sufficient for comparison. The main criterion for analysis is the positive record of a trait or its presence. The negative record or its absence always leaves a doubt concerning the chronological distribution of the trait: Or is it absent because of sample size, or because it did not exist at that time. On the contrary, a positive record is an unambiguous proof for the presence of a given trait at a given moment within the sequence.

In order to obtain a clear pattern of changes the discussion of temporal distribution of traits will be limited to a choice of frequent iconographic themes. Other rare, but very characteristic themes as well as characteristic shapes are mentioned within the discussion. The remaining themes and shapes will not be further analyzed as to their distribution within vertical stratigraphy. The temporal pattern with the horizontal stratigraphy has been presented and a finer temporal distinction is not possible for many traits. Therefore the choice of traits analyzed according to their distribution in vertical stratigraphy is thought to reflect a chronological pattern that might be refined by further studies under consideration of other traits.

The chronological interpretation of the presence/absence pattern of traits observed in the stratigraphies requires awareness of the critical points of such a study. Barker (1977) resumes the problems generally inherent in chronological interpretation of artefact distribution in stratigraphies:

> "It is important for the excavator to be highly sceptical of simplistic schemes which place sherds of pottery in plausible sequences based on appearance alone" (Barker 1977: 172)

> "It seems most unlikely that it will ever be possible to date a pottery group more closely than within a bracket of 25 years." (Barker 1977: 174)

> "It must be stressed that pottery, like any other dating material, provides only a *terminus post quem* for the layer in which it was found" (Barker 1977: 174)

As a consequence to these problems, the results from the present study, just as any chronological analysis have to be regarded as preliminary. The database is sufficient to show a general developmental trend that will serve to date larger samples of pottery. However, future changes in the chronological placement of concrete traits are possible as a result of new archaeological evidences.

B.5 Classification of the Nasca Pottery from Palpa

The Nasca pottery from Palpa included in the present study has been described and classed according to the principals outlined in the previous chapters. Here, the concrete classification will be discussed presenting the **fragment shape categories** and the observable subcategories of shape in relation to their temporal signification as observable in the horizontal stratigraphy. The presentation in the text and in the corresponding plates (Plates I.1-54, II.1-11) is ordered by fragment shape classes (cf. Table 13). The definition of **subcategories of shape** is subordinated.
Among these subcategories a distinction has to be made between **1)** morphologic varieties without chronological significance that can be *defined only arbitrarily within the continuum of existing shapes*; **2)** morphologic varieties without chronological significance that can be *clearly defined due to the absence of similar shapes*.
In both groups *chronologically significant varieties* may occur, characterized by a temporal distribution limited to one or two of the four Nasca periods.

B.5.1 Classification of shapes

I Neckless vessels

I 1 A Neckless vessels with convex flaring walls
Plates I.1-10
A total of 340 fragments or 17.9 % of all neckless vessels have been classified in this category. It is the third most frequent category among the neckless vessels. The category is evenly represented at all major sites analyzed for this study (Estaquería 20%, Los Molinos 20.8%, La Muña 16.4%, PAP 78 26.3%, Parasmarca 17.7%).
A further subdivision of this category is possible by wall inclination and rim diameter, but it is to be noted that differences are gradual and a definition of subclasses would be arbitrary. Therefore the distributional pattern of features of shape among the sites will be checked for further subdivision.

Wall inclination is from 5 to 80°, averaging 20.5°. Strongly flaring walls with an inclination of 50° or more are rare in Early and Middle Nasca (Los Molinos 0.8%, La Muña 2.5%) and become more frequent in Late Nasca with 19.7% at Parasmarca.

At Los Molinos the wall inclination is between 5° and 35° with one example of 50°, the average is **15.3°**. At La Muña the inclination of convex flaring walls is between 5° and 65°; the average is **20.7°**. At Parasmarca wall inclination is between 5° and 80°, the average is **25.4°**, even without the unique specimen of 80°, the average is 24.6°. There is a clear tendency that from Early to Late Nasca the walls of the convex flaring vessels become more flaring. However, it is to notice that this trend is based on average calculations. A wall inclination of 5°-35° is present at all sites and does not serve for chronological distinctions; wall inclinations larger than 50° are a temporal marker for Late Nasca.

Rim diameter varies between 6 and 35 cm, averaging 18.5 cm. On the basis of this an arbitrary subdivision into small bowls (6-14cm), medium sized bowls (15-22cm) and large bowls (23cm and more) is possible.

The **rim shape** of the convex-flaring fragments is typically rounded and direct, the top of the rim may be slightly flattened. There is a tendency that the flattening of the rim occurs mainly at La Muña and Parasmarca, but still here the rounded rim is prevailing. Variations of the rim occur mostly at La Muña; these are: thickened rim, vertical rim, and exterior grooved rim. A flaring rim contrasting with the convex wall has been observed on unique examples at Los Molinos and Parasmarca. All these variations are rare varieties. Some specimens from Estaquería and Initial Nasca examples from Parasmarca have a tapering rim (5 frgs).

On 94 fragments some information about the **base shape** has been conserved. The most frequent base shape is a rounded continuous base. A pronounced break has been observed mainly on Early Nasca fragments from Los Molinos (11 examples), with only few later occurrences (La Muña: 4 frgs, PAP 78: 1 frgt, and Parasmarca: 1 frgt). Other varieties of base shapes include lens shaped bases (3 frgs), flat (2 frgs), and conical (1 frgt). These varieties do not form any distributional pattern.

All of the convex flaring fragments can best be regarded as bowls.

Regarding the above observations on shape, a visual comparison of cross section drawings helps to define some subcategories, in some cases with possible chronological significance. However, it is to be noted that the following subdivisions are highly dependent upon the preservation of the profile line. All differences have to be regarded as gradual with the possibility of finding specimens that will not fit exactly in any of the categories.

I 1 A Subcategories of shape

I1A-1 (Plate I.2)

Walls are only slightly flaring or nearly vertical and of medium height. The base seems to be continuous and deep, but has not been preserved on the specimens analyzed. The shape is related to the straight flaring bowls, categories I1B-3/4. The wall inclination is like in category I1A-4, but the walls are higher and the base seems not pronounced.

I1A-2 (Plate I.3-7)

The walls are clearly convex with varying wall inclinations. Some specimens may have lower walls (e.g. Plate I.5: 7-8); other examples feature smaller diameters (Plate I.6: 8-10). However, there is no clear boundary for the definition of a further subcategory. All examples are more convex rounded than in I1A-1. The bases seem to be continuous.

The specimens with a slight inclination constitute the boundary to I1A-1 and the placement of these transitory pieces in one or the other neighboured categories is arbitrary.

I1A-3 (Plates I.8-9)
Vessel walls are only slightly convex, nearly straight. The base angle is slightly pronounced. Wall height is medium; in some instances it might be low. Wall inclinations vary from nearly vertical to about 25° flaring. The base is generally deep and rounded.

I1A-4 (Plate I.1)
Walls are nearly vertical and low; there is a pronounced base break. This shape is similar to the straight walled category I1B-4. Both neighboured categories present the same vessel type; the difference is gradual, reflecting small variations in wall shape from straight to slightly convex.

I1A-5 (Plate I.1)
This is a category of high walled bowls. The walls are slightly convex only and have a low inclination. The difference to I1A-2 is gradual, by wall height only. Comparable specimens are among the straight and concave walled categories.

I1A-6 (Plate I.10)
This is a miscellaneous category including several unique or rare shapes that do not fit exactly in any of the above categories:
a) The most characteristic specimen is a convex-concave bowl with a pronounced base angle. This shape is more related to I1C for the concave curvature in the lower part of the wall, but it has been classed here according to its rim section that is clearly convex. Vessels of this shape that are preserved only as a small rim fragment would be classed in the convex flaring category, probably as I1A-2. With the complete wall preserved this is a highly diagnostic but rare Middle Nasca shape that is related to some Late Nasca shapes (I1C-6).
b) One example has low convex walls and a large diameter. It is very distinct from Nasca shapes and belongs to the Late Paracas period.
c) This is a unique example of a very flaring convex bowl. This shape may be included within the I1A-2 category, but appears less deep.
d) A small bowl with only slightly flaring convex walls, also related to the I1A-2 varieties.

I 1 A Horizontal stratigraphy
The temporal distribution of the subcategories of shape as reflected in the horizontal stratigraphy can be seen in Table 14.

Table 14: I1A subcategories of shape by period

I1A Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1		X	X	X
2	X	X	X	X
3			X	
4		X	X	
5		X	X	
6		X	X	

The temporal distribution pattern indicates that subcategories 1 and 2 are not useful shapes for chronological distinctions as these shapes occur in all periods. However the fragments from I1A-2 with a tapering rim are restricted to Initial Nasca. I1A-3 is particularly interesting as this shape seems restricted to Middle Nasca. Subcategories 4 and 5 are restricted to Early and Middle Nasca and the iconography has to be considered. Subcategory 6 is a miscellaneous category of rare shapes. Of these I1A-6a is a diagnostic Middle Nasca shape.

I 1 B Neckless vessels with straight flaring walls (Plates I.11-17)

A total number of 374 fragments have been recorded with a straight and flaring wall. This category includes 19.6 % of the rim fragments from neckless vessels. It is the second most frequent category among the neckless vessels.
Straight-flaring walled vessels have their peak in Early Nasca Los Molinos with 28.1 % of the neckless vessels having straight flaring walls. However, the decrease towards Late Nasca at Parasmarca is slow, with still 14.4 % of straight-flaring vessels in Late Nasca. Only at Estaquería there is comparably little evidence of these vessels (2 examples, 5.7 %).

Both examples from Estaquería have a wall inclination of only 5°. The diameter is of 20 cm. The outstanding characteristic of these specimens is the conical continuous base. The rim is rounded and direct.

For the other sites further differentiation on the basis of wall inclination and rim diameter is useful to structure the sample, but again, the differences are gradual. Wall inclination is from 5° to 60°. Rim diameter ranges in a continuum between 7cm and 35cm with one exceptional case of 44cm.
There is a certain clustering of **rim diameters** between 12 and 22 cm. As all fragments seem to belong to bowl shapes and not to vases it can be stated that there are small bowls with a diameter of up to 14cm, medium sized bowls from 15 to 22 cm and large bowls with diameters of 23 cm and more.
A **wall inclination** of 50° and more has been documented only at Parasmarca, with one exception at La Muña. It can be regarded as a clear temporal marker for the Late Nasca period. Among the fragments with a wall inclination of 35° to 45° there are 21 examples (12.5%) from La Muña and 13 from Parasmarca. In this case the shape criterion alone only helps to exclude an Early Nasca or Initial Nasca origin.
The fragments with an inclination of 5° to 30° are evenly distributed on all three sites, with only a weak tendency toward a slight inclination of 5°-15° (61% of the straight

flaring fragments) at Los Molinos, and a medium inclination of 20°-30° at La Muña (56.6%). At Parasmarca there is the most pronounced inclination of 35°-60°, but these cases count only for 27.6% of the straight-flaring vessels. 59.5% of the straight flaring fragments from Parasmarca have a wall inclination from 10° to 25°.
The average wall inclination of the straight flaring fragments at Los Molinos is **15.9°**; at La Muña it is **22.5°**; at Parasmarca it is **24°**. The tendency of a pronounced inclination in Late Nasca is more obvious in the category of concave-flaring rim fragments.
As a limiting factor for this kind of statistics, there is a certain (low) percentage of Middle Nasca pottery present at Parasmarca.
The base shape of straight flaring fragments can be reconstructed for 63 fragments. Most have a rounded base, many with a pronounced break (interior or exterior). Of these, most are from Los Molinos (25 frgs), and only occasional occurrence is known from later sites like La Muña (6 frgs) Parasmarca (3 frgs), PAP 78 (3 frgs). Lens shaped bases are also known from several sites. Of the 14 specimens, 7 frgs are from Los Molinos, the remainder from La Muña, PAP 78, and Parasmarca. A lens shaped base may or may not be combined with a pronounced break. Conical bases are known in combination with straight-flaring walls only from Estaquería, and thus become a temporal marker for the Initial Nasca period.

Rim shape is mostly rounded and direct. In some occasions the rim may be slightly flattened, flat or tapering but there is no clear pattern of combination with other features that would allow the definition of subclasses.

I 1 B Subcategories of shape

The above distinctions and the comparison of profile drawings permit the definition of a series of subcategories and varieties.

I1B-1 (Plate I.11)
These are very low sided bowls with nearly vertical walls and a slightly pronounced base angle (see I1A-4).

I1B-2 (Plate I.11)
This is another variety of low sided bowls with nearly vertical walls and a continuous base. Among these two first categories there may be some interference depending on the base break, its preservation and the sometimes subjective definition of what is a pronounced break. Another related category is the convex-vertical one (I2A-2).

I1B-3 (Plates I.11-14)
The bowls in this category are straight sided and flaring, with different diameters and different proportions. Walls are of medium height; some deeper specimens occur. The base break is continuous or little pronounced. The base seems not so deep as compared with the height of the wall.

I1B-4 (Plates I.15-16)
These are low to medium sided bowls with a pronounced base angle and nearly vertical walls. Some more flaring specimens occur and there is a gradual transition to higher

walls, but still combined with a pronounced base angle. Where the base break is not preserved this category is the same as category I1B-3. The difference to category I1B-1 is in wall height.

I1B-5 (Plate I.17)
Walls are low and slightly differentiated through a slight base angle. Wall inclination is always clearly flaring. The base is rounded and deep as compared to the wall height. These bowls often have an interior decoration.

I1B-6 (Plate I.17)
The walls are strongly flaring and straight. In some cases there seems to be a concave or convex tendency observable in the wall shape, relating this category with I1C-6 and 8.

I 1 B Horizontal stratigraphy

Table 15: I1B subcategories of shape by period

I1B Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1	X			
2	X			
3		X	X	X
4		X	X	
5		X	X	
6			X	X

Subcategories 1 and 2 are diagnostic Initial Nasca shapes. Subcategory 3 is a large category widely restricted to Early Nasca and Middle Nasca. Very few Late Nasca specimens fall into this category. Probably a larger portion of the profile line preserved would help to identify these specimens as I1C 6 or 8. Subcategory 4 and 5 are also restricted to Early Nasca and Middle Nasca. The iconography provides a better means for chronological distinctions. Subcategory 6 is restricted to Middle Nasca and Late Nasca. Again the iconography is required for chronological distinctions.

I 1 C Neckless vessels with concave flaring walls
Plates I.18-31
This is the largest category including 36.8% of the rim fragments from neckless vessels. Concave flaring vessels have their peak of popularity in Late Nasca times. At Parasmarca a 50% of the fragments from neckless vessels belong to this category. By contrast, at Estaquería this category is nearly absent with only one example. But already in Early Nasca it becomes the most important category with 30.6% at Los Molinos. During Middle Nasca there is little change in the frequency with 36.4% at La Muña and only 21.1% at PAP 78.

The only example from Estaquería is a small bowl with only a slightly concave, nearly straight wall and a wall inclination of 10°. The rim diameter is 9 cm and the base is lens

shaped. The specimen is from the surface level at Estaquería and marks the transition to Early Nasca.

Rim diameters range between 5 and 42 cm. The wall inclination is from 5° to 60°. Differences are gradual.
Most of the fragments in this category belong to bowls. However, especially among the small fragments from small diameter vessels it is possible that they belong to flaring rim vases (I3C1-2). The crucial differentiation of bowls and vases, as these have been defined for complete Nasca pottery, is the main index rim diameter/height. Vases are taller than they are wide while bowls are wider than they are tall. For lack of a reliable height estimate, here these fragments will be regarded as one single category. However, in some instances the preservation of the fragments suggests a change in the orientation: While the rim is flaring the wall soon assumes a vertical orientation that suggests it could be insloping in the missing part below. However, these observations will not sustain a solid subclass, but only account for the possible existence of vase shapes within the concave-flaring category.

A further problem with concave sided fragments is that there is certain tentativeness in the measuring of the inclination of these sherds. Some sherds show a strong curvature so that the inclination varies according to the point of the wall where it has been measured. Differences are gradual again and no clear-cut distinctions can be made.

The prevailing **rim shape** is rounded and direct in 555 occasions, from Early to Late Nasca. A slightly flattening of the rim occurs mainly at Parasmarca (40 frgs), but is also known from La Muña (25 frgs) and from Los Molinos (6 frgs). Here a slight tendency can be seen in the development of rim shapes on concave-flaring vessels.

A more exclusive characteristic observed on 33 vessels from Parasmarca is a convex rim. The rim section is convex upcurving, in contrast to the concave flaring wall. The few cases from La Muña (4 frgs) and from Los Molinos (1 frgt) show this clear temporal tendency. It is to be noted that the convex rim can be rounded as well as slightly flattened. The wall inclination of these vessels is always larger than 15°, averaging 35.9°. The rim diameter is from 8 to 29 cm, at Parasmarca from 12 to 29 cm, averaging 19cm. It is possible that not all of these fragments are from bowls. There are some high shapes known with the same characteristic.
At La Muña, some examples of a thickened rim occur.
Flaring rims (9 frgs) occur mainly at Parasmarca (5 frgs), but this feature is present at La Muña (2 frgs) and Los Molinos (2 frgs) as well. The flaring rim is characterized by an inclination that is more pronounced than that of the already flaring wall. But, the shape is continuous; the delimitation of the rim area is arbitrary.

The **wall inclination** has a certain chronological significance, observable also in the straight- and convex-flaring categories. At Los Molinos concave-flaring vessels have an inclination of typically not more than 30°. Only 8.1 % of the concave-flaring fragments at Los Molinos have an inclination of 35°-40°. None has an inclination of 45° or larger.

At La Muña only 1.8% of the concave-flaring fragments are within the category of 45° inclination or more. The vast majority of vessels have wall inclinations of 20°-35° (78.2%). Therefore, wall inclinations of 45° and more can be regarded as a temporal marker for the Late Nasca period.

Most of the vessels have a **diameter** between 8 and 20 cm. Larger diameters of 21-32cm are mainly associated with wall inclinations between 20° and 40°, while the inclination of 5°-15° (51 fgrs, 14.6%) is nearly exclusively combined with diameters from 8 to 20 cm. The differences in shape in the range 8 to 20 cm are gradual and the only possible distinction to be made is the arbitrary one between small bowls or vases ranging between 8 and 14 cm and medium sized bowls ranging from 15 to 20 or 22 cm.

I 1 C Subcategories of shape
The following subcategories of concave flaring walled vessels can be defined:

I1C-0 (Plate I.18)
This unique shape is a small bowl with slightly concave slightly flaring low wall and a lens shaped base.

I1C-1 (Plate I.18)
Walls are slightly concave and slightly flaring. Walls are high; the base is unknown.

I1C-2 (Plates I.19-20)
The bowls in this category have slightly flaring walls. The pronounced concavity of the wall causes a characteristic cross section with a second maximum diameter at the base break.

I1C-3 (Plates I.21-I.24)
These vessels have slightly concave walls, more flaring than in category I1C-1. The transition is gradual. There is a large variety of different inclinations and diameter/height proportions. Wall size is medium to high. For fragmented pottery the characteristics are quite uniform. The examples with only the upper part of the wall preserved might also belong to deeper shapes. Base shapes are rarely preserved. One example has a pronounced rounded base (Plate I.22).

I1C-4 (Plate I.25)
Walls are strongly concave and flaring. Walls are high; the base can be rounded or more lens shaped.

I1C-5 (I.26)
Walls are concave and very flaring. The principal characteristic is a slightly up curving convex rim section. The strong inclination of the wall may cause a pronounced rim/base diameter proportion of about 2:1.

I1C-6 (Plate I.27)
Walls are high and flaring, with a pronounced rim/base diameter contrast. The category is similar to I1C-6, but diameters are larger.

I1C-7 (Plate I.28)
Walls are slightly concave and very flaring. The category is differentiated from I1C-6 by the continuous rim and from I1C-5 by less concave walls ad a stronger inclination of the wall.

I1C-8 (Plate I.29-30)
These are small diameter deep flaring bowls or cup bowls. The wall is concave with varying inclinations and high. The most outstanding characteristic is the rim diameter/height proportion approximating the 1:1 proportion. Vessels from this category are difficult to identify because the wall has to be preserved nearly completely.

I1C-9 (Plate I.31)
This is another subcategory of cup bowls with a second maximum diameter at the base. This category is transitory to the concave insloping vase shapes with a flaring rim (I3C).

I 1 C Horizontal stratigraphy

Table 16: I1C subcategories of shape by period

I1C Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
0		X		
1		X		
2				X
3		X	X	X
4				X
5				X
6		X	X	
7				X
8		X	X	
9			X	
10			X	

Subcategory O is a unique specimen, transitory between Initial Nasca and Early Nasca. Subcategory 1 is restricted to Early Nasca. Subcategory is a very characteristic Late Nasca category. Subcategory 3 houses very different shapes, but with gradual differences. The constituting shapes are present from Early Nasca to Late Nasca. There is only a tendency that the concavity and the inclination of the wall become more pronounced towards Middle Nasca. In Late Nasca this category remains rare and related to I1C2 or I1C4 (compare Plate I.22: 4). Categories 4, 5, and 7 are restricted to Late Nasca. However, Category 6 is very similar and confirms that the temporal classification of smaller fragments remains a difficult task. Subcategory 8 is principally a Middle Nasca shape. Some rare occurrences in Early Nasca are possible. However, no clear temporal differences can be defined. Subcategory 9, a cup bowl with to maximum diameters is restricted to Middle Nasca, a pattern reflected in the concave insloping vase shapes (I1C). Subcategory 10 is a unique shape, a small high shape with nearly vertical walls, so far restricted to Middle Nasca.

I 2 A Neckless vessels with convex vertical walls
Plates I.32-33
A number of 21 fragments have been classed in this category. Rim diameters range from 10 to 32cm with the majority of fragments having a diameter of 16 to 22 cm (14 frgs). The inclination of the vertical walls is of 0°.
The prevailing rim shape is the rounded and direct rim (18 frgs). On one example from Parasmarca the rim is flat and thickened. Another example from Los Molinos has a slightly insloping rounded rim. With this characteristic the sherd is related to the convex insloping bowls that are prominent in Initial Nasca and at the beginning of Early Nasca.
In total there are 9 frgs from Los Molinos, all bowl shapes with a diameter ranging from 16 to 30 cm. Due to the convex appearance of the wall, the maximum diameter of the vessels is always slightly larger. There is no base preserved; the preserved height of the wall is from 2.4 to 4.6 cm. The frieze decoration of these fragments suggests that the complete wall would not have been much higher than the preserved part. These examples from Los Molinos present a diagnostic Early Nasca shape of low sided bowls with a presumably pronounced base angle.
From La Muña there are 4 fragments within the same category. The diameter is 16 cm, in one case 20 cm. The preserved height is 2.3-5.3 cm, very similar to the examples from Los Molinos. However, a thorough observation of the three examples with 16 cm diameter suggests that the original wall height would have been higher than the preserved part. The iconography is not preserved in its complete height and therefore the wall height is not complete. The original wall height can be estimated at about 5-6 cm. In relation to the relatively small diameter of only 16 cm the wall would be of medium height with a Rim diameter/wall height index of 2.7-3.2.
The fourth example from La Muña is more similar in shape to the Early Nasca examples. Still, the iconography is very characteristic of the Middle Nasca period.
From Estaquería there are 4 fragments in this category. The diameters range from 10 to 20 cm. The preserved height is 2.3 to 3.7 cm. The rim shape is rounded and direct. Base shape is rounded in two cases, in one case conical. The base angle is not pronounced.
At Parasmarca there are 3 fragments within this category. One fragment is characterized by a flat and thickened rim, combined with 32cm rim diameter and a wall thickness of 6-8 cm. The other two fragments have rim diameters of 16 and 20 cm. The preserved height is from 3.7 to 4.6 cm. According to the lack of iconography, these fragments can be regarded as part of the intrusive Initial Nasca material at the site. They have to be compared to the materials from Estaquería.

I 2 A Subcategories of shape
Convex-vertical walled vessels constitute a small but well defined category. A detailed comparison of the fragments within this category allows the definition of three subcategories.

I2A-1 (Plate I.32)
These are low sided bowls with vertical slightly convex walls. The base angle may be pronounced. The vertical walls nearly appear to be straight.

I2A-2 (Plate I.32-33)

Walls are very low and clearly convex.

I2A-3 (Plate I.33)
The wall is more convex and the diameter is larger. This is a rare shape, observed only in Initial Nasca so far.

I 2 A Horizontal stratigraphy

Table 17: I2A subcategories of shape by period

I2A Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1		X	X	
2	X			
3	X			

Subcategories 2 and 3 are restricted to Initial Nasca. Subcategory 1 is more frequent in Early Nasca than in Middle Nasca. For some specimens the wall height cannot be determined.

I 2 B Neckless vessels with straight vertical walls
Plate I.34
Within this category there are 10 fragments: 9 from Los Molinos, and 1 from La Muña. Consequently a straight vertical wall is a good temporal marker for Early Nasca.
At Los Molinos, rim diameter ranges between 12 and 24 cm; the preserved height is from 2.2 to 7.8 cm. Possibly in this category two types of bowls are included: low bowls and medium high bowls. The rim shape is mostly rounded and direct. In one example it is rounded and flaring; one rim is tapering and direct, two rims are slightly flattened on the exterior and one is slightly flattened on top.
From La Muña there is one fragment with a rim diameter of 32 cm. The thickness of wall of 0.7 cm suggests a fragment of a larger vessel. The rim is rounded and direct.

Straight and vertical walls form an intermediate category and relatively few vessels have been classed within this category. A base is not preserved in any of these cases and no further subdivision has been possible. It can be seen that the specimens all have a convex or concave tendency. The absolute wall height is in many cases undetermined (Plate I.34).

I 2 B Horizontal stratigraphy

Table 18: I2B subcategories of shape by period

I2B Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1		X		

All but one example are Early Nasca. Vertical and nearly straight or straight walls can be regarded as a good temporal marker. However, other occurrences are always possible.

I 2 C Neckless vessels with concave vertical walls
This is a theoretical category. All concave walls have been placed in the concave flaring or concave insloping categories.

I 3 A Neckless vessels with convex insloping walls
Plates I.35-37
Within this category 88 fragments have been registered. This is a 4.6% of all neckless vessels in the sample. But the relative frequency at the sites is different. At Estaquería a 54.3% of all neckless vessels are convex insloping; at Los Molinos it is 6.2%, at La Muña only 1.3%; at Parasmarca there is a slight increase to 7%. However, this increase may be due to mixing with Initial Nasca material at the site. So far, a convex insloping wall can be regarded a good indicator for an Initial Nasca origin. During Early Nasca there are still some occurrences, but later this shape nearly disappears. Diameters range between 2 and 27 cm; wall inclination is from 5° to 60°.
The 19 examples from Estaquería are all bowls shapes, with a rim diameter of 15 to 27 cm, on two occasions a small diameter of 11 and 12 cm. The inclination is mainly 5°; on four occasions it is 15°, in two cases 20°. The large diameter of these vessels permits a classification as bowls.
The base shape is generally rounded, in two cases conical; the base angle is not pronounced. However, there is a clear change in the orientation of the wall from insloping in the upper section to flaring at the base.
The rim is generally rounded and direct, in one case it is tapering.

At Parasmarca there are 28 examples. Diameters range from 2-22 cm; wall inclination is from 5° to 50°. This variability corresponds to two shapes: bowls and neckless jars.
Neckless jars have a wall inclination from 35° to 50°; the rim diameter is from 2 to 13 cm, in one case 16cm. The rim shape is generally rounded, in 3 of 7 cases thickened. One fragment features a flat and thickened rim, another one is characteristically insloping. It seems that within this minor shape category there is some variation within the rim shapes. The bases have not been preserved.

The convex insloping bowl shapes at Parasmarca have diameters of 12 to 18cm in one case 22 cm. The wall inclination is from 5° to 30°. Two specimens have an inclination of 40° and 50°. Rim shape is generally rounded and direct. Tapering or thickened rims may occasionally occur. One rim is vertical, contrasting with the insloping wall, but it is not a separated rim, so as to class it as a rim neck. The preserved base fragments suggest a rounded base without a pronounced break.

Two fragments have been classed as “others”. Wall inclinations are 35° and 30°, rim diameters are 15 cm and 13 cm. Rims are rounded direct and rounded vertical. These fragments are at the border between convex insloping bowls and neckless jars.

At Los Molinos 27 fragments feature a convex insloping wall. Rim diameters range from 7 to 22 cm; wall inclination is from 5° to 50°. Fragments with a slight wall inclination and a large diameter have an open vessel appearance and are related to bowl shapes. Vessels with a stronger inclination of the wall and a smaller diameter can be

regarded as closed vessels and may be denominated as neckless jars. However, the transition between these two shapes is gradual.

Neckless jars at Los Molinos (7 frgs) have a diameter from 7 to 12 cm and a wall inclination from 20° to 50°. Rim shape is rounded and direct; in one case it is flat. The base is not preserved on any of these fragments.
A number of 14 fragments have been tentatively classed as bowls. Rim diameters range from 12 to 22 cm. Wall inclination is from 5° to 25°, in one case 35°. Differences to the neckless jars seem to be gradual and not always determinable on fragmented pottery.
Rim shape of these bowls is generally rounded and direct; in one case it is tapering.

Two fragments have been denominated as vases. One has a vertical rim, the other a slight wall inclination of only 10°. Both have small diameters: 9-10 cm.

At La Muña there are 13 examples of convex insloping vessels. With regard to the vast amount of pottery sherds from the site included in this study, this is only a small percentage (1.3%) of the neckless vessels from the site.
Diameters range from 7 to 20 cm; the wall inclination is from 5° to 60°. The largest group has an inclination of only 5°, combined with a varied rim diameter from 7 to 20 cm. these examples can be regarded as bowl shapes. One specimen with a wall inclination of 15° and a diameter of 11 cm stands at the transition between neckless jars and bowl shapes. The remainder (5 frgs) can be regarded as neckless jars, with a diameter from 10 to 14 cm and a wall inclination of 25° to 60°.

I 3 A Subcategories of shape
Three different shape categories can be defined:

I3A-1 (Plate I.36-37)
These are vessels with only slightly insloping (up to 15°) and low walls.

I3A-2 (Plate I.37)
These vessels have a varying wall inclination of even more than 20° or more. Walls are medium high.

I3A-3 (Plate I.35)
The wall inclination is always more than 20°. The wall is clearly convex. The complete vessel height is not preserved in any of the examples, but is likely that the fragments belong to globular closed vessels or neckless jars.

I3A-4 (Plate I.35)
This is a unique specimen. The wall is slightly convex and slightly insloping. The wall height is medium or high. Rim diameter is 7cm.

I 3 A Horizontal stratigraphy

Table 19: I3A subcategories of shape by period

I3A Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1	X			
2	X	X		
3		X	X	
4			X	

Subcategory 1 is a good diagnostic for Initial Nasca. Subcategory 2 occurs also in Early Nasca, but to a very small percentage. In Middle Nasca this shape is insignificant. The convex walled neckless jar of subcategory 3 is known from Early Nasca and Middle Nasca. Apparently the frequency decreases with time. Subcategory is a unique specimen that is Middle Nasca related.

I 3 B Neckless vessels with straight insloping walls

Plates I.38-41

Within this category 25 fragments have been registered. Rim diameters range from 7 to 23 cm with one example of 30 cm. Wall inclination is from 5° to 30°, with the slight inclinations prevailing. It is obvious that in combination with a strong inward slope the wall would soon assume a convex appearance and would thus be classed in another category. Rim shapes are mostly rounded and direct, only occasionally tapering (1 frgt) or rounded and flaring.

As the convex-insloping vessels, straight-insloping wall fragments may be grouped according to the relation of rim diameter and degree of wall inclination into at least two groups: bowls and neckless jars. In accordance with other classification and due to the less rounded appearance compared with the convex walled neckless jars, the straight walled variety may be denominated as vases.

Only 5 fragments have been classed as bowls. Rim diameters are from 12 to 23 cm; the wall inclination is 5° to 15°.

The distribution between the sites does not form a characteristic pattern. From Estaquería there is one fragment; 8 fragments are from Los Molinos; 13 fragments from La Muña; 2 fragments from Parasmarca; 1 fragment from PAP 78. According to this, straight insloping walls occur principally in Early Nasca and Middle Nasca.

I 3 B Subcategories of shape

I3B-1 (Plate I.38)

Walls are medium high and straight and remarkably insloping. The walls may even obtain a convex appearance, being closely related to category I3A-2.

I3B-2 (Plate I.38)

Walls are low and remarkably insloping. Walls are straight and the base angle is pronounced. This category is related to I2A-2.

I3B-3 (Plate I.39-I.41)

Walls are straight and insloping. The base is missing, but the small diameter and the preserved wall of some of the examples suggest a vase shape. Wall inclination of a late example (Plate I.41: 1) is stronger.

I3B-4 (Plate I.38)
The upper wall is slightly convex and slightly insloping (5°-10°). The wall height is unknown and the base is not preserved, consequently the shape can not be further defined. Small and large diameters occur.

I 3 B Horizontal stratigraphy

Table 20: I3B subcategories of shape by period

I3B Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1		X		
2		X		
3	X	X	X	X

While the first two subcategories are apparently restricted to Early Nasca and by this constitute a rare but characteristic diagnostic for this period, subcategory 3 is present in all periods. In Initial Nasca this shape is rare and the only example is characterized by a tapering rim. Early Nasca and Middle Nasca examples of straight insloping vases cannot be differentiated by shape of the rim section. Maybe the proportions of complete vessels provide some means for chronological distinction. The shape is most frequent in Middle Nasca. In Late Nasca it is rare again; apparently wall inclination and thereby the rim/base diameter contrast is increased.

I 3 C Neckless vessels with concave insloping walls
Plates I.42-53
Within this category there are 265 fragments. All can be denominated as vases. The concave insloping fragments are highly diagnostic in identifying vases among the fragmented pottery, because these characteristics of the upper wall are not shared with other shapes. Rim diameters range from 5 to 22 cm. All vessels show a slight constriction with a wall inclination from 5° to 30°. Two examples feature a stronger inclination of 35° and 55° and have a more globular appearance.
A further subdivision of the sample by wall inclination and rim diameter is possible, but as the changes are gradual, no subdivision of the category will be achieved.

Bases are preserved on a few occasions only, probably due to the original height of the vessels. Some vessels have a rounded base without a pronounced base angle. One other example has a lens shaped base with a pronounced break.

So far it can be stated that the concave-insloping fragments clearly prevail at La Muña, where 224 fragments or 22.8% of the neckless vessels fall in this category. This contrasts with only 6.2% at Los Molinos, and 3.2% at Parasmarca. Keeping in mind the existence of some Middle Nasca pottery in the upper levels of Los Molinos it is obvious that concave insloping fragments are highly diagnostic for Middle Nasca.

I 3 C Subcategories of shape

A subdivision of the sample is possible by rim orientation. Most rims are rounded; few specimens feature a slightly flattening, interior, exterior or on top. Three specimens have a tapering rim. Among the rim orientations three varieties can be differentiated: 1) a **direct rim** that is shaped as a direct continuation of the concave insloping wall and is therefore slightly insloping; 2) a **vertical rim** that is equally a direct continuation of the wall, but through the vertical orientation of the upper part the vessel assumes a special appearance; 3) a **flaring rim**, also a continuation of the concave wall shape that contrasts with the insloping wall. Within the flaring rim category other varieties occur.

I3C-1 (Plate I.42-47)

The wall is concave insloping, while the rim section is flaring. The vessel proportions suggest that most specimens are taller than they are wide and therefore would fall within the vase category. Consequently this shape can be best described as a vase with a flaring rim and a bulbous body. The maximum diameter is at the body.

I3C-2 (Plates I.48-49)

This is a flaring rim vase, in the rim section very similar to I3C-1. But, in this case the body diameter does not exceed the rim diameter and consequently the body does not have the same bulbous appearance. This shape has two maximum diameters and is related to the deep flaring bowls with two maximum diameters (I1C-10). Some specimens are clear high shapes with proportions similar to other vases. However, some specimens are low, approximating the 1:1 Rim/height proportion.

I3C-3 (Plates I.50-51)

This is a vase with a vertical rim section and with the maximum diameter at the body, causing a bulbous appearance of the body. The differences between this vertical rim category and the neighboured categories of flaring rim and continuous insloping rim are gradual (I3C-1, I3C-4).

I3C-4 (Plates 52-53)

A minor category has a continuous rim that is insloping as the concave insloping wall. This category houses only few specimens. The concavity of the wall is much reduced approximating this category to the straight insloping vases (I3B-3).

I3C-5 (Plate I.47)

This is a unique shape: a miniature vase characterized by a reduced height with a rim/height proportion approximating 1:1.

I 3 C Horizontal stratigraphy

Table 21: I3C subcategories of shape by period

I3C Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1		X	X	
2			X	
3		X	X	
4		X	X	X
5		X		

In Initial Nasca no concave insloping vessels occur. Subcategory 1, the flaring rim bulbous vase is known from Early Nasca and Middle Nasca contexts. Frequency is much increased in Middle Nasca as compared with the few occurrences in Early Nasca. This category is mainly a Middle Nasca shape. However, for chronological interpretation the earlier examples require an additional check of the iconography present. Subcategory 2 is known only from Middle Nasca, making this shape an important Middle Nasca diagnostic. The distribution in the vertical stratigraphy suggests that this shape is not present from the beginning of Middle Nasca, but rather represents an advanced moment of this period. Subcategory 3 is known from Early Nasca and from Middle Nasca. The category is not as frequent as the flaring rim bulbous vase. It is more frequent in Middle Nasca, but among the few Early Nasca vases the shape is also present. Subcategory 4 is known from Early, Middle and Late Nasca, while again the middle Nasca occurrences prevail. Subcategory 5 is a unique shape from Early Nasca.

II Necked vessels

In total, 444 fragments have been registered that belong to necked vessels. On the basis of the study sample no representational calculation can be made about the relative frequency of necked vessels compared to neckless vessels. Among the fineware, necked vessels are rare, a pattern observable also in among the complete pottery from burials. However, there is one exception: double spout and bridge bottles are fairly frequent in burials (Carmichael 1988), but lack nearly completely in the study sample. This may be explained by functional differences.

For the study sample not all coarse ware fragments have been documented. The size of the sample had to be limited to an amount of fragments that could be documented in a reasonable time. As the focus of the study is chronology and not the functional interpretation of pottery assemblages, it had been decided to concentrate upon the decorated fineware, because this bears the maximum amount of chronological information. The high frequency of fineware pottery on every Nasca site (more than 50% of the samples) permits this focus. Consequently only a choice of the best preserved coarse ware pottery has been documented. It is felt that the number of documented coarseware vessels for the study is sufficient to account for the varieties existent in Nasca pottery and to detect existing temporal trends.

The counts of fragments from necked vessels per site points out the difficulties inherent in a comparative statistic:

Estaquería	6 frgs
Los Molinos	76 frgs
La Muña	124 frgs
Parasmarca	235 frgs
PAP 78	3 frgs

There is an over representation of fragments from Parasmarca in comparison with La Muña and Los Molinos, and even a comparison between those two sites is difficult. The quantity relation between these sites is about 4:2:1 (Parasmarca:La Muña:Los Molinos). This pattern does by no means represent the relative frequency of coarse ware at the respective sites. More likely, the absolute percentage of coarse ware keeps stable in all epochs and hence this specific quantity relation has to be kept in mind when interpreting the distribution of sherds. As a consequence, the statistic calculations presented here will show only rough tendencies. However, the sample size for each of the three major sites should be sufficient to trace the presence or absence of certain shape features at the sites.

No complete necked vessel is present in the sample. The preserved body sections suggest that necked vessels had globular or ovoid bodies. In some instances handles had been attached, or to the body or to the neck (Plate II-11).

II 1 A Necked vessels with convex flaring neck
(Plate II.2)

Among the necked vessels there are 54 with a convex flaring neck; this is a 12.2% of all necked vessels included in the study. Vessels with a convex-flaring neck constitute a minor group on most sites: Estaquería 33.3% (2 frgs), Los Molinos 18.4% (14 frgs), La Muña 7.3% (9 frgs), Parasmarca 11.5% (27 frgs).

Rim diameters range from 9-44 cm. Neck inclination is between 5° and 45°, with one example of 70°. A subdivision by diameter and inclination of neck is possible, but changes are gradual.
However, there are some temporal tendencies visible:
Among the fragments with a neck inclination of 5° to 15° (10 frgs) 8 frgs are from Parasmarca, and only one respectively from La Muña and Los Molinos.
A neck inclination of 20°-25° (20 frgs) is equally represented at all sites: Los Molinos 5 frgs, La Muña 5 frgs, Parasmarca 9 frgs and 1 frgt from PAP 78.
Convex-flaring fragments with an inclination of 30°-35° (12 frgs) have been observed at Parasmarca (5 frgs), Los Molinos (5 frgs), and only to a minor degree at La Muña (1 frgt), and PAP 78 (1 frgt).
Fragments with a neck inclination of 40°-45° (11 frgs) are known from Parasmarca (5 frgs), Los Molinos (3 frgs), La Muña (2 frgs), and Estaquería (1 frgt).
A unique example of a convex flaring fragment with an inclination of 70° has been documented at Estaquería.
The statistic value of these counts is very limited. However it suggests that convex flaring walls, with a slight inclination of 5°-15°, were especially prominent in Late Nasca. However, the presence of this shape in other periods does not allow a period

assignation based on this single argument. Furthermore, it is to be noted that a 33% (2 frgs) of the necked vessel sample from Estaquería falls within this category. Consequently, the examples from Parasmarca could also be interpreted as Initial Nasca (Plate II.2: 1-2). At La Muña there are comparatively few convex flaring fragments. The examples resemble the concave and straight flaring necks with a flaring rim and are best interpreted as a temporal insignificant variety of these (Plate II.2: 4-5). While the number of neckless vessels from La Muña in the sample is nearly double that of Los Molinos the quantity relations of convex-flaring fragments are inverted with 14 frgs from Los Molinos compared to 9 frgs from La Muña. The Early Nasca convex flaring necks are best comparable to those from Middle Nasca with a flaring rim (Plate II.2: 3).

Several varieties of **rim shapes** occur; there is no clear pattern of temporal significance of these shapes.

Flaring rims (29 frgs) (Plate II.2: 3-6):
rounded-flaring (27 frgs)
slightly flattened interior-flaring (1 frgt)

Direct rims (19 frgs) (Plate II.2: 1-2):
rounded-direct (13 frgs)
slightly flattened top-direct (3 frgs)
flat-direct (2 frgs)
thickened exterior-direct (1 frgt)

Insloping rims (1 frgt):
slightly flattened top-insloping (1 frgt)

Rim necks (Plate II.1: 1)
rounded flaring (1 frgt)

Parts of the body of these vessels have been preserved in 12 cases. The body is globular with a convex insloping wall. The wall inclination is between 20° and 75°. There is no clear temporal pattern observable.
Bases of vessels with convex flaring neck have not been preserved. In analogy with known complete necked vessels, the typical base shape should be rounded without a pronounced break. The absence of diagnostic base fragments in the sample of coarseware supports this hypothesis.

II 1 A Subcategories of shape
Two Nasca varieties could be defined for the convex flaring category. A further two subcategories have proved to belong to the earlier late Paracas period.

II1A-1
(Plate II.2: 1-2)
This subcategory has a short to medium high convex flaring neck with a direct rim

II1A-2
(Plate II.2: 3-6)
The neck is only slightly convex and has a flaring rim. The height of the neck is medium to high.

II1A-3
(Plate II.1: 7)
This is a convex flaring face neck. The wall is only slightly flaring, the rim is direct. This shape is Initial Nasca or Late Paracas.

II1A-4
(Plate II.1: 1)
This unique specimen is a late Paracas vessel. The rim neck is convex and only slightly flaring. It has been illustrated here to show the differences as compared with the later Nasca shapes.

II 1 A Horizontal stratigraphy

Table 22: II1A subcategories of shape by period

II1A Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1	X			
2		X	X	X
3				
4				

Subcategory 1 is possibly limited to Initial Nasca. Subcategory 2 is Equally present from Early to Late Nasca.
Subcategories 3 and 4 are no Nasca shapes.

II 1 B Necked vessels with straight flaring neck
(Plate II.3-7)
A number of 133 fragments have been documented belonging to vessels with a straight flaring neck; this is a 30% of all necked vessels in the sample. The percentage counts per site are as follows: Estaquería 16.7 % (1 frgt), Los Molinos 25% (19 frgs), La Muña 30.6% (38 frgs), Parasmarca 31.9% (75 frgs). So far, this distribution does not have any chronological significance. The straight flaring necks are closely related to concave flaring necks. Many straight sided necks have a flaring rim and so the boundaries between both categories are flowing. Due to this, both categories are arranged on the same plates (Plates II.3-7).

Rim diameters range from 2.5-42cm. Inclination of the neck is from 5° to 55°, with one example of 85°.
14 fragments with a straight-flaring neck have been recorded with a wall inclination of **5°-10°**. Of these, 11 frgs are from Parasmarca, 2 frgs are from La Muña, 1 frgt from Estaquería and none from Los Molinos. Rim diameters within this subcategory range between 5 and 34 cm.

In the category of **15°-20°** inclination of neck, there are 24 frgs: Parasmarca 14 frgs, La Muña 7 frgs, and Los Molinos 3 frgs. This pattern corresponds to the general quantity relation of sherds belonging to necked vessels from these sites. Rim diameters are between 2.5 and 42cm.
A number of 41 fragments have an inclination of **25°-30°**: Parasmarca 22 frgs, La Muña 14 frgs, Los Molinos 5 frgs. Rim diameters are between 12 and 40cm.
An inclination of **35°-40°** has been observed in 31 cases: Parasmarca 12 frgs, La Muña 12 frgs, Los Molinos 7 frgs. Rim diameter is from 12-38cm.
Inclination of **45°-50**°: 9 frgs, Parasmarca 5 frgs, La Muña 1 frgt, Los Molinos 2 frgs, Estaquería 1 frgt. Inclination of **85** : Parasmarca 1 frgt.

There is no clear pattern of particular wall inclinations being especially related to any of the sites or periods within the category of straight flaring necked fragments.

Rim shape within this category is generally rounded (100 frgs). It can be rounded-flaring (63 frgs) or rounded-direct (28 frgs).

Direct rims (36 frgs)
- direct-rounded (28 frgs)
- direct-slightly flattened top (3 frgs)
- direct-thickened (2 frgs)
- direct-slightly flattened interior (2 frgs)
- direct-top grooved (1 frgt)

Flaring rims (72 frgs)
- flaring-rounded (63 frgs)
- flaring-flat (1 frgt)
- flaring-slightly flattened top (2 frgs)
- flaring-tapering (2 frgs)
- flaring-thickened (2 frgs)
- flaring-thickened exterior (1 frgt)
- flaring-slightly flattened interior (1 frgt

Among the observed rim shapes there are a significant number of rim necks included in this category (12 frgs) (Plate II.1: 4-6). These are generally rounded, with occasional interior flattening. The short flaring rims vary in their inclination between 5° and 55°. Straight flaring rim necks have been observed only at Parasmarca, Los Molinos and Estaquería. There is no case known from La Muña.
Among the categories of flaring-rounded and direct-rounded there is no clear distributional pattern observable. In the case of the minor varieties the number of specimens is not representative. Perhaps the rim neck category prevails at Early and Initial Nasca.

II 1 B Subcategories of shape
Regarding all characteristics, a number of two subcategories of straight flaring necks can be defined.

II1B/C-1
See below, II 1 C; straight and concave necks have been lumped in this category.

II1B-2
This is a rim neck category (Plate II.1: 5-6). The neck is to short define its exact shape. It is not explicit convex or concave. The orientation is flaring

II1B-3
This is a variation of the rim neck consisting of a thickened rim with a very short differentiated outer rim (Plate II.1: 4).

II 1 B Horizontal stratigraphy

Table 22: II1B subcategories of shape by period

II1B Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1		X	X	X
2		X		
3	X			

Subcategory 1 is present from Early Nasca to Late Nasca.
Subcategory 2 might be restricted to Early Nasca, and subcategory 3 to Initial Nasca. However, these shapes are rare further studies on this topic are required.

II 1 C Necked vessels with concave flaring neck
(Plate II.3-7)
A number of 162 fragments have been documented that feature a concave flaring neck; this corresponds to a 36.5% of all necked vessels. The percentage counts per site are: Estaquería 33.3 % (2 frgs) (Plate II.7: 5), Los Molinos 31.6% (24 frgs) (Plate II.4: 1; Plate II.7: 1-2), La Muña 40.3% (50 frgs) (Plates II.3; II.5; II.4: 3-4; II.7: 3-4), Parasmarca 36.6% (86 frgs) (Plates II.6; II.4: 1; II.7: 6-7).
Rim diameters range from 4-44cm; neck inclination is from 5° to 60°, with exceptional specimen featuring 70°-85° or even 100° of neck inclination.

A large variety of **rim shapes** have been documented. Rim shapes include rim necks, flaring rims, direct rims, and convex rims.

Flaring rims (33 frgs)
rounded-flaring (31 frgs)
slightly flattened interior-flaring (1 frgt)
slightly flattened top-flaring (1 frgt)
Flaring rims prevail at Parasmarca (16 frgs) and La Muña (15 frgs), while there is relatively little evidence from Los Molinos (2 frgs)

Direct rims (85 frgs)
rounded-direct (76 fgrs)
slightly flattened top-direct (5 frgs)
tapering-direct (3 frgs)

flat-direct (1 frgt)
There is no distributional pattern of direct rims observable.

Neck break
There are 6 cases of an interior pronounced neck break, with out any significant patterning. 7 specimens show a pronounced neck break, also without patterning. In 20 cases there is no pronounced break observable. For the remainder fragments the neck has not been preserved.

Bases have not been conserved, except in one case. This is a rounded base without a base angle.

For Estaquería there is no representative sample available. The frequency pattern for the material from Los Molinos, La Muña, and Parasmarca corresponds to the frequency proportions of the pottery in the sample: 1:2:4. Generally there are few examples of concave flaring necks with a slight inclination (5°-10°) and with a strong inclination (more than 50°). As to be expected, here most examples com from Parasmarca, but this is no representative pattern.

II 1 C Subcategories of shape
The concave-flaring shape alone does not yield any temporal information. However, some morphological subcategories can be defined. The principal differences occur in neck height.
II1B/C-1
Most fragments feature a relatively high neck (Plates II.3-II.7: 1). This category is the same for straight and concave walls. The most characteristic morphological difference is between flaring rim (e.g. Plate II.3: 1, 5) and a direct rim (Plate II.3: 3, 4). There are some intermediate shapes (e.g. Plate II.3: 2, 6) that confirm the insignificance of this variation.

II1C-2
A minor category presents a relatively short and markedly concave flaring neck approximating the rim neck category (Plate II.7: 4-7). There is a large variety of rim diameters. Interpreting the specimens from Parasmarca as Initial Nasca this shape might represent the Initial Nasca necked jar. Further studies might confirm this pattern.

II1C-3
This is the rim neck category (26 frgs) (Plate II.1). Rim necks are generally rounded, in one case thickened. The inclination is between 5° and 100°. In two cases a handle is applied directly to the rim. Rim necks occur only at Parasmarca (22 frgs), Los Molinos (2 frgs), and Estaquería (2 frgs). As this distribution repeats the pattern known from the straight-flaring rim necks, it might be deduced that during Middle Nasca there were no rim necks. However, at least fineware rim necks are known to occur within Middle Nasca. At Parasmarca many rim necks have been documented, a part of these can be thought of as intrusive Initial Nasca.

II 1 C Horizontal stratigraphy

Table 23: II1C subcategories of shape by period

II1C Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1		X	X	X
2	X			
3	X	X		(X)

Subcategory 1 is present from Early to Late Nasca. Subcategory 2 can tentatively be interpreted as an Initial Nasca shape. Subcategory 3 might also be early in the sequence being restricted to Initial and Early Nasca. However, it is likely that among the many examples from Parasmarca there are at least some Late Nasca fragments and for Middle Nasca sample bias cannot be excluded.

II 2 A Necked vessels with convex vertical neck
(Plate II.8)
There are only two fragments that fit into this category. The rim diameter is 6cm and 7cm. The rim shape is rounded and direct. The neck break is in both cases pronounced. The convex insloping wall differs, with one forming a high shoulder with an 80° inclination, while the other has a wall inclination of only 45°. One example is from La Muña (Plate II.8: 2), the other one from Los Molinos.

II 2 B Necked vessels with straight vertical neck
(Plate II.8)
There are 10 fragments within this category, from Parasmarca (8 frgs), Los Molinos (1 frgt), and La Muña (1 frgt). Rim diameters range from 8-16cm, with one exception at 22cm.
Rim shapes are vary:

Rim neck (4 frgs) (Plate II.1)
rounded (2 frgs)
slightly flattened interior (2 frgs)

Direct rim (2 frgs)
rounded-direct (2 frgs)

Flaring rim (3 frgs)
rounded-flaring (3frgs)

Rim unknown (1 frgt)

II 2 C Necked vessels with concave vertical neck
(Plate II.8: 3-4)
There are only four fragments within this category. The rim diameter is from 3 to 27 cm Two specimens from Parasmarca have a rim diameter of 10-11cm. The rim shape of these specimens differs as one is a flat and direct rim, while the other is also direct, but thickened and rounded.

The neck with 3cm diameter can be considered a bottle (Plate II.8: 4). The rim is rounded and flaring and thus highlighting the overall concave shape of the neck.
Finally, there is one specimen that has a large diameter of 27 cm (Plate II.8: 3)
The small number of vessels within this category does not permit any chronological interpretations.

II 3 A Necked vessels with convex insloping neck
(Plate II.9-10)
Of the necked vessels, 13 frgs feature a convex insloping neck.
The diameters range between 6 and 14cm; neck inclination is from 5° to 25°. This small group is quite homogeneous in shape. Examples are known from La Muña (5 frgs), Los Molinos (5 frgs), Parasmarca (2 frgs), and PAP 78 (1 frgt). Regarding the relatively high number of fragments from Parasmarca present in the sample of necked vessels, it is possible that the convex insloping neck is mainly limited to Early and Middle Nasca.
Rims are mostly direct and rounded, in one case with a slight interior flattening. One example has a flaring rounded rim.
Wall inclination of the convex insloping wall varies between 25° and 60°.
Bases are unknown for all examples.

II 3 A Subcategories of shape

II3A-1
The neck is slightly convex, slightly insloping and high, with a small to medium large diameter (Plate II.9: 1-3). The shape is known from Los Molinos and La Muña.

II3A/B-2
(Plate II.10)
This is a shared category including convex and straight insloping walls. The inward slope is stronger than in II3A-1 and contrasts with the short flaring rim. Most vessels of this shape are known from Early Nasca. Interpreting the example from Parasmarca as Initial Nasca, it is possible that the shape is also typical for Initial Nasca necked jars.

II3A-3
Some face neck jars have a convex insloping neck, very similar to II3A-1 (Plate II.9: 4-6).

II 3 A Horizontal stratigraphy

Table 24: II3A subcategories of shape by period

II3A Subcategory	Initial Nasca	Early Nasca	Middle Nasca	Late Nasca
1		X	X	
2	X	X		(X)
3		X	X	

Subcategories 1 and 3 are Early and Middle Nasca related. Subcategory 2 may have an early connotation, occurring in Early Nasca and Initial Nasca. However there is a possibility that this shape is also present in Late Nasca.

II 3 B Necked vessels with straight insloping neck

These are 4 examples, with all major sites represented. Rim diameters range from 2 to 14 cm.

The fragment with 2 cm rim diameter is a spout with 5° wall inclination, probably from a double spout bottle at Los Molinos. The rim is rounded. The scarcity of these findings in settlement contexts is interesting, as in burial contexts the double spout bottle constitutes a prominent shape category (Carmichael 1988).

The 5 cm rim fragment is a bottleneck of a further undefined bottle shape. Inclination of the wall is only 5°; the rim is flat. It is also from los Molinos.

The remainder three examples have rim diameters of 8 cm and 14 cm. The inclination of the neck-wall is from 10° to 30°. The rim is flaring on two occasions (Plate II.10: 1, 2); one example has a direct rim.

II 3 C Necked vessels with concave insloping neck

There are 5 fragments within this category. Rim diameter ranges from 4 cm to 14 cm; inclination of the neck-wall is from 5-35°

One example from La Muña has a small diameter of only 4 cm.

The inclination of the neck-wall of this fragment is unknown. It has an applied ear. Therefore it can be interpreted as a face neck jar. (Plate II.9-743-20

The other fragments have inclinations from 5° to 35°; diameters range between 9 cm and 14 cm. Rims can be direct or flaring, but are always rounded.

The small number of fragments in this category does not permit any further subdivision.

B.5.2 Classification of decoration

In this chapter an introduction to the decorative themes and principal components identified in Palpa is provided. Reference is made to the Dawson classification of designs themes (Proulx 2006), as it has been applied in the Palpa classification (see B.4.1.2). The horizontal stratigraphy or site provenience is included in this section. The system of presentation of the decoration is at first level by iconographic theme; at a second taxonomic level subcategories or variations of themes will be defined. In a third step, the subcategories are chronologically arranged; chronological information is derived from the analysis of horizontal stratigraphy. A more detailed discussion of specific chronologically significant design traits can be found in the stratigraphic analysis, considering the vertical stratigraphic information.

Classification of Nasca decoration is to complex to be presented here completely in descriptive text format and such a description would lack the functions of an electronic database. Consequently, the classification of many fragments is accessible only through the electronic database (Appendix 5). In this chapter, the discussion of the defined themes and the corresponding design traits supplies important information for understanding the iconography and the chronological changes inherent.

The classification follows the methodology outlined above (Chapter B.4.1.2). The discussion of designs in this section is limited to the presentation of themes and their variations with only the most characteristic components and features being discussed and ordered by site provenience. The following presentation provides a key to the illustrations provided on Plates 1-136.

The presentation of decorative themes is limited to the discussion of Early, Middle and Late Nasca periods, from Los Molinos, La Muña and Parasmarca, and additionally for PAP 78 for he Middle Nasca period. At Estaquería design is generally plain or simple geometric. It is not necessary to apply the complex classification for later Nasca decoration; the decoration is principally technically differentiated from the later Nasca phases. The simple geometric decoration can be clearly distinguished. The sample from Estaquería is presented and characterized in chapter C.1.

Decoration has been documented on 4764 of 5516 fragments included in the design database. 4171 fragments have a polychrome engobe on the exterior (cf. Table 25). Thus, the vast majority of fragments have been decorated with polychrome engobe painting and the designs applied by this technique are the topic of the following presentation.

Table 25: Decorative techniques in the sample

Total number of fragments analyzed	5516
Fragments decorated	4764
Polychrome engobe exterior	4171
Polychrome engobe interior/monochrome exterior	103
Polychrome engobe exterior and interior	36

Monochrome engobe exterior	371
Reduced black	12
Incision	34
Negative	1

In the Palpa sample, about 90 decorative themes and major variations have been defined. This is not an absolute number because it changes according to the definition of variations; however, it provides an impression of the iconographic variability present in the Nasca style. The themes can be placed in different categories (cf Blasco/Ramos 1980; Carmichael 1988; Proulx 2006; Silverman 1993). These categories help to structure the data.
A comparison of the themes identified at Palpa with those identified in museum collections studied by other authors reveals that most design traits are very characteristic Nasca traits, while variations in some details occur. Most probably this is due to sample size: not all themes have been depicted with the same frequency. Another factor might be regional differences in the pottery. Maybe there have also been some regional predilections for some designs. Even a functional differentiation is imaginable with some minor design themes limited to burial use and therefore represented in the museum collections. All these sources for differences in the style have to be sorted out in order to identify the temporal differences valid for the Palpa area.

The theme-categories defined for the present sample are:

- Mythical
- Human
- Trophy heads
- Objects
- Animal
- Bird
- Fish
- Crop or fruit
- Geometric

Mythical

AMB

(Plates 1-13)
The AMB theme is the most complex theme in Nasca iconography and surely the theme with the highest degree of variation. Proulx (2006: 62-79) defines 15 different categories of AMB, some of these with further subcategories. Some of the categories already have a chronological connotation, being restricted to certain parts of the sequence others exist in variations over several phases. For purposes of classification of fragmented pottery only two kinds of AMB will be differentiated as this classification is possible even for very small fragments. This basic differentiation is between the

Monumental AMB (Proulx 2006: AMB 1-5, and 8-12), and the Proliferous AMB (Proulx 2006: AMB 6-7, 14).

Monumental AMB

(Plates 1-10)

The monumental AMB is restricted to Early Nasca and Middle Nasca. Subcategories can be defined by several criteria, e.g. the subcategories of Proulx's AMB-1 are based on the streamer or signifer (Plates 21-27) and the ending of this, called terminator (Plate 22: 2-3) (Proulx 2006:62). The variations of animal or plant characteristics included in this streamer allow a fine differentiation. However, on fragmented pottery no complete AMB is preserved. Further, some of the subcategories are more semantic in nature, related to the interpretation of the iconography.

The head of the AMB is the part that best can be identified even on fragmented pottery. It is also the part that is most similar on Monumental AMB representations. Several categories and subcategories of AMB share the same features in the depiction of the head. The variations described in the following mainly correspond to the features described in the literature (Proulx 1968; Roark 1965; Wegner 1976). The AMB theme is the best documented theme and the temporal markers defined by Dawson and his scholars are comparatively well defined for this theme.

The **forehead ornament** is present on all AMB representations. In the Palpa sample some important differences can be observed, some of which have a chronological connotation as suggested by the horizontal stratigraphy:

In Early Nasca the face in the middle of the forehead ornament has often closed eyes (Plate 1: 1, 7, 10), but eyes may also be open (Plate 1: 8; 2: 5). The middle section is often high and has lateral hooks (Plates 1: 1, 8, 10; 2: 2, 4). The shape of the hooks is variable; some hooks and laterals may have dot faces upon. Most specimens feature a black head behind the forehead ornament; the color of the forehead ornament is generally white, with some exceptions of orange or gray (Plate 1: 7, 2, 10). There is a certain range of variations in the design of the forehead ornament (Plates 1-2); however, none of the minor variations seems to fulfil a concrete temporal pattern.

In Middle Nasca the forehead ornaments have a flat and compact appearance. The hooks are joined with the laterals. The eyes on the forehead ornament are closed. The color is generally orange or red. The black head above the forehead ornament is replaced by a colored band (Plates 9: 3, 4, 8, 9).

In Early Nasca the **ear lobes** are depicted below the forehead ornament, diagonally attached, the shape may be rounded or triangular (Plates 1: 11; 2: 8-9). In some occasions the ears lack (Plate 1: 7-8). In **Middle Nasca** the ears are included in the band above the forehead ornament (Plate 7: 1, 2, 8, 9).

The **mouth masks** are variable in Early Nasca: The laterals may have dot faces upon, with opened or closed eyes (Plate 1: 1, 2, 5, 6, 7). The laterals can form a trapezoid block with black segmentation (Plate 1: 1); the tips can be slightly separated (Plate 1: 10, 12), or the laterals have no segmentation at all (Plate 1: 4). The Mouth mask can be

split above the mouth (Plate 1: 3, 4); closed with additional hooks resembling the split mouth mask (Plate 1: 1, 2, 10), or it is closed with nostrils (Plate 1: 7).
Middle Nasca Mouth masks are always closed above the mouth and have nostrils. The laterals are usually of trapezoid shape with a dot face upon (Plates 8-10). One example has volute laterals (Plate 9: 9)
These variations of mouth masks suggest the possibility of stylistic seriation with the mouth mask open above the mouth and the opened eyes types being the earliest while the nostril type (Plate 1: 7) clearly leads over to the Middle Nasca shape of mouth masks. The volute type might precipitate the proliferous use of volutes in Late Nasca. However, the distributional pattern within the stratigraphy is not overly clear. The general period definition for this component is clear, but earlier example may occur.
There
In Early Nasca the **mouth** of the AMB is mostly ovoid and white (Plates 1, 4), while in Middle Nasca it is mostly colored (Plate 10), although some white lips occur (Plate 10: 1, 8). Attached tongues exist in both periods (Plates 4: 4; 9: 9; 10: 3). AMB representations with a longer or even elaborated tongue exist (Proulx 2006: 69, AMB-5), but these are not present in the Palpa sample.
The **face** is mostly red or dark red, but sometimes it can also assume other colors. The face color does not seem to have a temporal relevance. AMB **eyes** are large and rounded or more almond-shaped. There is clear tendency that eyes are rounded and white open in Early Nasca (Plate 1); in Middle Nasca they become more almond shaped elongated, sometimes rhomboid (Plate 9); in Late Nasca AMB eyes can semicircular and attached to the forehead ornament or volute fan (Plate 11: 2). However, on human figures Late Nasca eyes are characteristically elongated (Plates 35: 7; 37-39), by this continuing the developmental trend.
Bangles are present on all AMBs. There is little variation. The color is generally white, but can be red, orange or gray as well. In some occasions the mouth mask laterals cross the bangles, a feature possibly more frequent in Middle Nasca (Plates 1, 2, 8, 9, 10).
In Early Nasca the **necklace** is usually single colored, but of varying shape, e.g. trapezoid, triangular, or rounded (Plate 4). Middle Nasca necklaces are characteristically multicoloured and consisting of trapezoid segments (Plate 10). Generally up to three dots are present on each segment.
The **hands** of the AMB are highly diagnostic for the striped sleeve and the club, darts or trophy head held. Early Nasca hands sometimes feature finger lines that do not cross over into the colored area of the hand (Plate 3: 3). This specific feature might be interpreted as early, because in Middle Nasca the finger lines always cross over into the colored area, as also on most Early Nasca specimens (Plates 3, 5). This depiction convention is repeated in the depiction of feet (e.g. not crossing: Plate 4: 1). A characteristic Middle Nasca feature observed on some specimens is an extended **thumb** (Plates 5: 5, 8; 6: 2) as contrasted with the "normal" thumb that is depicted resting to the hand (Plates 3; 5: 4, 9; 6: 1, 3). The **club** is of trapezoid shape with horizontal segmentation lines (Plate 3: 6) and is not always depicted in Early Nasca. In Middle Nasca clubs may have additional red dots, perhaps representing blood (Plate 5).

The body of monumental AMBs is rarely preserved in the Palpa sample. In Early Nasca the body can have a vertical or horizontal orientation (Plate 4: 6, 7). In Middle Nasca

the body is generally horizontal and the shirt is characteristically striped with a navel eye (Plate 6: 5, 6).

From Parasmarca two fragments are known that feature a horizontal body and the head is also horizontal (Plate 13: 5, 6). The overall characteristics of these two specimens suggest that they are Middle Nasca. For the orientation of the head they mark the transition to Late Nasca (Blagg 1975).

Proliferous AMB (Late AMB)

After Middle Nasca some drastic changes in the iconographic canon occur. The Late Nasca figures, although derived from Middle and Early Nasca antecedents differ so clearly that they are best classed in separated categories (Proulx 2006: 69-71). However, it is sometimes difficult to identify with certitude the corresponding subcategory of theme, because all mythical design themes in Late Nasca share the same proliferous design elements.

The **volutes** and **rays** characteristic for Proulx's AMB-6 and AMB-7 are easily identifiable on fragments (Plate 14). Among these it can be differentiated between solid colored – mostly black – volute rays and colored ones – red and yellow – with black outlining. The length of the volute rays differ slightly, but this is a criterion hard to measure, especially in the case of fragmented design. Volute rays are the most ubiquitous component on Late Nasca mythical figures. In many cases additional hair hanks are attached.

The identification of concrete mythical figures (Proulx 2006: 69-77) is more difficult and depends strongly on the preservation of diagnostic components of a mythical theme. Some Late mythical themes could be identified and will be presented here. But these are mostly unique examples that do not allow any further chronological subdivision.

Spectacled AMB

(Proulx 2006: 71, AMB-6-A)

When the eye section of this mythical figure is preserved, the classification is straight forward. Other fragments instead are hard to attribute to this theme with certitude (Plate 11: 1).

Fan headed AMB

(Proulx 2006: 75, AMB-7)

The volute rays are radiating in a fan like manner from a characteristic oval. Like with the spectacled AMB again there may be many fragments with volute rays that might belong to this mythical theme, but there is no other concrete diagnostic. As a limiting factor to this classification fan headed AMBs may also be spectacled (Plate 11: 1-4)

Components of Proliferous AMB

There are several unique examples of components of some subcategory of Late AMB.

Some fragments preserve the depiction of angular paws, diagonal to the head (Plate 12: 1, 3-5).
A trophy head belt (Plate 13: 1-2) indicates the presence of a body. Another fragment depicts what appears to be a late streamer with some bangles (Plate 13: 4).
Some rays have trident endings (Plate 12: 3, 5); hands with red nails can also have a trident appearance (Plate 12: 2). Other variations of rays are quartet rays (Plate 13: 1, 6) that are clearly also related to some late mythical figure.

Bizarre Innovations

Rayed face

Two fragments can be classed in the Rayed face category. This is an isolated rayed figure related to the forehead ornament and the AMB (Plate 13: 8-9). The design is Middle Nasca related, but clearly anticipates the proliferous use of volutes and rays known from Late Nasca. On one example the color of the face is a light red. The volutes are alternating red with black outlining and simple linear black. The volutes are not rounded like the characteristic Late Nasca volutes but more hook shaped. The other example is orange with black outlining and features jagged rays. The stratigraphic position and association of both fragments will be discussed below.

Undefined

A unique design is an oval with dot faces and spikes, executed in dark red on buff. This linear execution of the design and its reduced size are characteristics of the Bizarre Innovation style. The design may be interpreted as a spiked snake (Plate 13: 7).

Star with eye

(Proulx 2006: 110, SWE)
This design is not exactly a star but a crowd of volute rays radiating from a central eye. The design is difficult to interpret. It might be an abbreviated and proliferated AMB or trophy head. There are several fragments with this theme; no further subdivision is possible. All examples are Late Nasca (Plate 15).

Killer whale

(Proulx 2006: 83, KW; Yacovleff 1932)
Several design elements are diagnostics for the Killer Whale theme. However, an identification of subcategories as propose by Proulx (2006) is difficult for the fragmentary condition of the design (Plates 16-18).
Very diagnostic is the large round eye with the crescent shaped spot above and below. The eye is characteristic for all Killer whale designs from Early to Middle Nasca. The Crescent shaped spot may lack in Middle Nasca (Plate 17: 2) or assume a semicircular shape (Plate 18: 1) In early Nasca the head is somewhat rounded. The jaws can have bristles upon or the bristles can be substituted by a volute resting to the jaw. Teeth may be represented by a wavy line (Plate 16). In Middle Nasca the shape is more angular, often with concave sided jaws. Bristles are reduced to up to three short lines that may

also be hook shaped or curved. The U-shaped mouth is now generally associated with red color. This may be a wavy line, a red frame or a solid colored filling (Plates 17-18).

The body is usually curved and divided in three horizontal bands. The middle band is filled with a segmented snake band (Plates 16: 2, 3, 7, 8; 17: 8, 18: 5). In Middle Nasca other body fillings occur (Plates 17: 1, 6; 18: 6) but cannot be clearly defined from the Palpa sample due to the bad preservation of the decoration. Some Middle Nasca specimens lack any naturalistic aspect. They are depicted in AMB fashion: with an extended human body and a streamer that ends in a tail fin and has characteristic triangular spikes (Proulx 2006: 86). However, the body of such an example is not present in the Palpa sample, nor is the characteristic streamer.
The size and shape of the tail fin vary. The ending can be concave rounded, V-shaped split or just straight. The tail fin can have a dot face trophy head included. As can be told from the small sample present, the Early Nasca tail fins are comparatively larger (Plate 16: 7-8) than their Middle Nasca counterparts (Plates 17: 6-8; 18: 5-6).

Bloody Mouth

(Proulx 2006:85; Roark 1965)
The Bloody Mouth theme can be best understood as an abbreviated proliferated Mythical Killer Whale. The representation is reduced to the head. The head consists principally of an open profile mouth with a wavy line representing the teeth and red spots representing blood, like seen on some Killer whale representations. Around the central mouth volute rays are radiating. The eye is a slit line eye (Plate 18: 7). This unique example from Palpa is Late Nasca, although the Bloody Mouth theme is originally a Middle Nasca Bizarre Innovation.

Serpentine creature

(Proulx 2006: 94, SN)
The head is similar to the AMB's head, but lacking a forehead ornament. Early Nasca serpentine creatures have a mouth mask with the laterals characteristically turned up (Plate 19). The mouth mask is open above the mouth, a feature occurring only on few AMB depictions. Middle Nasca serpentine creatures lack this mouth mask, but may have linear whiskers or a spiked face with cleft points (Plate 20).
Below the chin two paws are attached. Within the Palpa sample this are always trapezoid or square in shape. The body is a spiked streamer. The middle band has dots or chained dots included, or segmented snakes.
Middle Nasca examples tent to have different bodies, for example a short spiral body or a doubled body extending to both sides of the head.
The body of the serpentine creature theme can not always be clearly distinguished from AMB streamers or isolated spiked bands. For further description of (possible) serpentine creature bodies see under the category *streamer*.

Streamer

(Plates 21-27)

A streamer is generally not considered a design theme of its own, but is an integral part of AMB or Serpent creature design. However, some isolated streamers occur. A streamer is defined as some parallel bands bordered by spikes. The bands can have filling elements and the spikes differ slightly in size and shape, but the general appearance is standardized. The arrangement of the streamer is horizontal. It may be straight or curved. Streamers are easily identifiable on fragments, but in many cases the associated theme is not preserved on the same fragment. Spiked streamers occur only in Early Nasca and Middle Nasca. Late Nasca examples are more characterized by attached rectangles and are generally rare (Plate 13: 4).
In Early and Middle Nasca the most obvious differences occur in the shape of the spikes. These can be triangular (Plates 21, 22, 25), or scalloped (Plates 23, 24: 1-2). Both varieties occur in both periods. In the Palpa sample there is a slight tendency that triangular spikes are more frequent in Early Nasca and scalloped spikes are more frequent in Middle Nasca. However, the sample is not suited for a statistic analysis. Spikes with cleft points are exclusively Middle Nasca related (Plate 26, 27); the same is true for long spikes (Plate 27). Low spikes occur in both periods and the sample is to small for further temporal definition (Plate 22: 6, 11; 24: 4-8; 26: 1, 2, 4). Undulated spikes are the opposite shape of scalloped spikes and are consequently present in both periods as well, yet they might be more popular in Middle Nasca (Plate 22: 10; 23: 9, 11, 12). Inclined spikes seem restricted to Middle Nasca (Plate 24: 6, 8). The low and long category can interfere with the cleft point or inclined categories. The spikes can have an outlining or lack it.
In Early Nasca the predominating color of the spikes is black, sometimes with a white outlining. Middle Nasca spikes are often red with a black outlining.
Other components of the streamer account for further possibilities of subdivision of this category. The presence of trophy heads between the spikes defines a mainly Middle Nasca related category (Plates 26, 27). In Early Nasca trophy heads are arranged at the beginning of the streamer with the spiked section following towards the end of the streamer (Plate 21: 7, 9). A further example from Los Molinos with trophy heads between the spikes (Plate 21: 8) has to be regarded as already Middle Nasca, additionally confirmed by the closed eyes of the trophy head. The parallel **bands** constituting the streamer vary in number, color, and outlining. The bands can include segmented snake, trophy head, several geometric designs or else. Some components are hard to define temporally. However, the linked ovals are Early Nasca related (Plate 21: 1-3; 22: 10). Wavy lines occur only in Middle Nasca (Plate 23: 10, 12), as do shifted opposed half circles (Plate 23: 9; 24: 2, 3; 25: 4).
In some instances the ending of the streamer is preserved. This part has been denominated as **terminator** and can consist of a series of different figures (Proulx 1968; 2006). In the Palpa sample the few terminators preserved are trophy head terminator (Plate 22: 2, 3).

Spotted Cat

(Proulx 2006: 88, SC-1)
An almost complete illustrated catalogue of variations of the Spotted Cat theme has been presented by Wolfe (1981). There are only four examples from Palpa that fit into this category, just enough to state that the theme existed in the Palpa area. All

specimens have been found in Middle Nasca contexts. But, no further chronological distinctions can be traced on this reduced sample.
The body is characteristically divided in several panels; one filled with pelage markings or with geometric patterning. The tail is horizontally striped and turned up. The spotted cat wears a loin cloth. The legs are also horizontally striped. To one specimen crops are attached (Plate 28) (cf. Wolfe 1981).

Harpy

(Proulx 2006: 88, HRP) There is only one secure Harpy design within the Palpa sample (Plate 29: 1). It can be recognized for the anthropomorphic head, resembling a trophy head with extended tongue, in association with the avian body, claws, and snake feathers. This design is Middle Nasca related.

Horrible bird

The sample of Horrible Bird designs from Palpa is small and fragmented but there are some highly diagnostic sherds that allow the identification of the theme. The study of the Horrible Bird theme by Elizabeth Wolfe (1981) presents an invaluable catalogue for the identification of this theme. The features identified in Palpa will be shortly presented (Plate 30).
The beak is easily identified for its white tip and the attached bristles sometimes attached (Plate 30: 1-3). Other fragments from Palpa show variations of the Horrible Bird's head: there is a symmetric head with vertical eye and trophy head peak (Plate 30: 5), and a symmetric head with vertical eye and forehead ornament design (Plate 30: 4). The object beside the head and that held in the beak on another example might be interpreted as a windpipe held by the beak (Plate 30: 1, 3, 5). Also very characteristic is the spotted body with anal eye and the association with snake feathers (Plate 30: 6). Mythical birds generally have a serrated wing border and trophy heads included in the wing. The fragments on Plate 29, 2-8) belong to the same category, but they might be part of another mythical bird like the harpy or even of an AMB with bird aspect (Plate 3: 6) (Proulx 2006: Fig. 5.12, AMB-2).
One highly abstracted figure will tentatively be classed as an abstract Horrible Bird with rounded body and head central to the body (Plate 30: 8). Most diagnostic is the presence of the serrated border, the bird like head with the large central eye, and the anthropomorphic feet that resemble those presented by Wolfe (1981: Figs. 100-102).

Human

Human figure

Several fragments depict parts of human figures; some of these can be classed. It can be differentiated between profile and frontal depictions of humans.

Profile human figures carry a stick; the body is colored with black outlining (Plate 31) or solid colored black or dark red (Plate 32). One of these profile humans features an outlining (Plate 31: 2-3). The head resembles realistic profile trophy heads, but the eyes

are opened and not excentric. The headdress is curved and hanging down, it can be solid colored or have a net design. Possibly this is meant to be some kind of textile worn above the head. They are depicted with a loincloth and two bands hanging down from the belt. One unique example is executed in incisive technique (Plate 32: 7). This can be interpreted as a technical archaism or possibly an innovation without further impact of Middle Nasca.

Frontal human figures are generally slightly more elaborated than their profile counterparts. The body is generally colored and outlined (Plate 31). Feet, legs and hands resemble the depiction conventions known from standing AMB representations. The arrangement can be isolated or in a row. All examples from Palpa are depicted in standing position, not in movement. The head is similar to the realistic frontal trophy heads.
One unique example is similar to the profile versions, featuring solid colored black legs and arms together with a colored striped shirt (Plate 32).

Face jars and effigy jars

(Proulx 2006: 122-125)
The representation of human faces – as an independent theme – occurs in Nasca art by engobe painting and partial modelling of the face. The design area can be the complete vessel in the case of neckless jars and vases, or the neck of a necked jar.
The vessel or its neck represents the human head, with face and hair painted. The nose and sometimes the ear may be modelled. In the case of necked jars, the body of the vessel can be designed as a human body. Here, modelling occurs in very rare instances; no example of a modelled body from Palpa is included in the sample.

According to the vessel shape two categories of painted and partially modelled human faces can be differentiated: 1) face neck- or figure jars; the distinction depends on the design on the body that is not necessarily preserved so that the two categories are lumped here; and 2) head jars, neckless vessels that represent only the head (but, cf. the flaring rim head jar category (Fig. 1: W).
The face neck or figure jars corresponds roughly to Proulx's categories HUM-1, 2, 3, 7, 8, and 9. The fine iconographic distinction is not practicable on fragments. The head jars are Proulx's category HUM-4 (Proulx 2006:124).
The face neck is known from Early Nasca and Middle Nasca (Plates 33-34). The head jar category is rare in Early Nasca (Plate 33: 2); in Middle Nasca it is more frequent (Plates 35-36); in Late Nasca only one head jar specimen occurs (Plate 35: 7). The outstanding late characteristic is the elongated eye similar to the girl faces category (see below). Face neck jars are generally known from Late Nasca (Lothrop/Mahler 1957: Plate III; Kroeber/Collier 1998: Fig. 351), and have also been documented in Palpa (Fux 2007: 125), but lack in the present sample.
Some Middle Nasca face necks and head jars feature a beard (Plate 34: 3, 35: 5-6; 36: 1). This trait has not been observed on any Early Nasca example within the sample. Another Middle Nasca related feature is the decorated hair (Plate 35: 1-3).

Sculptured noses of head jars and face neck jars are easily identified and constitute a good diagnostic of these shape classes (Plates 33-36). A chronological differentiation of noses is not possible.

Fisherman bottle

Two fragments of the sample belong probably to a Fisherman bottle (Proulx 2006: 177, Fig. 5.265). One fragment preserves the pointed extreme of a white panel filled with cross hatching (Plate 119: 10). It closely resembles the extremes of the fishing net between the hands of the figure depicted on Fisherman bottles. The other example presents the lateral of the vessel with the fishnet being filled (Plate 121: 8). Possibly more fragments with a cross hatched design fall into this category but the complete theme cannot be reconstructed (Plates 119-122).

Girl faces

(Proulx 2006:125, HUM-6) (Plates 37-39)

The girl faces theme is always associated with some other decoration and arranged in a frieze at the lower border of the design area. This theme is restricted to Late Nasca, represented here by the sample from Parasmarca. On the component level there is nearly no variation. Some minor differences are observable on the feature level: The mouth can be red or white, rectangular or linear, straight, wavy, or curved. Some girl faces have eyebrows attached to the hair, others lack eyebrows. The color of the face is generally buff, some variations in red and white occur. The lateral braids can be straight or curved; they are mostly diagonal, sometimes vertical or horizontal, and they can have a split or broadened ending. Unique examples of girl faces have an angular contour and closed slit line eyes (Plate 38: 8-9), or red line face markings (Plate 38: 5).

Harvester

(Proulx 2006: 92, HV1-2)

There are two fragments of face neck jars in the sample that feature characteristic red dots upon a yellow face (Plate 34: 1-2) These face markings are clearly related to the harvester theme (cf. Proulx 2006: Fig. 5.68 and5.69). The Harvester is an anthropomorphic figure associated with crops and fruit.

Another representation of the harvester is a painted standing human figure with the characteristic conical hat. This figure is also associated to agricultural products. Possibly one of the standing human figures in the sample would correspond to this theme. But, as the head is lacking this cannot be confirmed.

Undefined anthropomorphic

Some fragments show anthropomorphic legs and loin cloth. These can be attributable either to a standing AMB theme, or to any depiction of a human figure (Plate 31: 9-12). The principal components to be compared with other depictions of anthropomorphic legs are the toe lines that might or not cross over into the colored area of the foot. The

loin cloth can also be described. Comparison within the Palpa sample is very limited, but it is interesting to compare the chronological position within the Palpa region with that assigned in previous studies (Proulx 1968; Roark 1965).

Trophy heads

Trophy heads appear in frontal or in profile orientation. The most common characteristic of all trophy heads is the excentric or closed eye, probably simulating the individual's dead (Carmichael 1994a). Trophy heads are found depicted as an isolated theme, arranged in a frieze of trophy heads or they can be part of a major design theme, generally a mythical figure holding or including a trophy head. Proulx (2006: 104-109) differentiates 19 categories of painted trophy head designs in Nasca art. Many of these are also present in Palpa. Each of these categories includes a large variety of trophy heads. Proulx's categories of realistic trophy heads are temporal oriented (Early, Late) but a more morphologic classification of the trophy heads of these periods is better suited to trace chronological changes. For the geometric abbreviated trophy heads, reduced to a geometric shape with a dot face, Proulx offers a morphologic classification. The principal dichotomy of frontal – profile, is the same as in Proulx's analysis.

Frontal trophy heads

Frontal trophy heads are known from Early and Middle Nasca.

Realistic frontal trophy heads: (Plates 40-44) The general shape of the face is semicircular; the ears may be additionally pronounced, creating an overall appearance of a rounded pentagon. The ears can be rounded or trapezoid; some are grooved in middle. The head is often bi- or trilobite undulated. Rare examples occur with more than three lobes on the head. Two braids, of rectangular or trapezoid shape hang down on both sides of the head. Sometimes these braids are merged below the chin to one black rectangle. A red curved carrying rope is sometimes attached to the head. All these traits do not seem to form a well defined chronological pattern. A good temporal diagnostic are the trophy head's eyes: In Early Nasca eyes are mostly semicircular opened and excentric, with the pupil attached to the upper lid (Plates 40-42: 1, 2). In Middle Nasca the overall design of frontal trophy heads is similar but closed slit eyes are now the rule (Plates 44-46), although opened eye versions persist (Plates 43; 44: 8, 9, 11). Dot face trophy heads can be regarded as developing from slit line eyes (Plate 46). Vertical stratigraphy has to define if the Early Nasca-like trophy heads (Plate 43: 1, 2) have an early position in the Middle Nasca stratigraphies. Other examples with open eyes (Plate 43: 4-5) differ clearly from their Early Nasca counterparts in the design of the hair.

The mouth can be semicircular and colored or linear curved. In some occasions it is pinned by two perpendicular dashes. A colored mouth occurs together with opened eyes, while a slit line mouth is combined with slit line eyes. In rare occasion a tongue is depicted. Other varieties have teeth depicted. Straight eyebrows are often present. The color scheme is very variable. Arrangement is often in a horizontal frieze with the trophy heads oriented vertically or horizontally; also association with major design themes occur.

Some minor varieties are known that share the overall characteristics of this category but still have some specific features. One example has the face horizontally divided and

painted in different colors. Pendants are attached to the ears (Plate 43: 8). Those trophy heads held by some other figure generally lack the lateral braids as they are held by the hair above the head (Plates 42: 1-2; 43: 7).
The background color is mostly white, in few occasion red. A black background occurs only one time in the sample; in this case for contrast the trophy head's hair is depicted in white.

Square trophy heads: square frontal real face trophy heads have pendant eyes, and a rectangular mouth. A short tongue can be attached to the mouth. The color scheme is very variable. This category of trophy heads is found included in figures like horrible bird bodies or streamers. Nose and ears can be marked by dashes or dots. Due to the arrangement of these trophy heads included in other figures they normally lack the braids. This subcategory is Middle Nasca related (Plate 44: 8-11).

Dot face
Early Nasca dot face trophy heads are extremely rare; consequently this category is a good indicator for Middle Nasca. The stratigraphic position of dot face trophy heads within the Middle Nasca stratigraphies should be observed.
Frontal dot face trophy heads occur generally in semicircular shape; triangular and square varieties also be found (Plates 45-46). These varieties share the same characteristics, reason for what they are described here together. Dot face trophy heads can be found attached to the border of streamers, between the spikes, or pendant to the vessel's rim. Generally two lateral braids are attached. These can be or of trapezoid shape, or rectangular; also linear versions occur. In other cases there is one broad central braid below the head.
The square varieties have additionally a spiked chin (plate 46: 4-9.
A much reduced version of this trophy head consists only of a half circle outlining with a dot face (Plate 45: 9-10). It occurs generally on mythical figures, being interpreted as a trophy head belt.

Some examples appear to be somewhat hasty executed; they are linear black. The dots of the dot face can number more than three and an interpretation as a trophy head is only possible in comparison to the other examples (Plate 46: 10, 11).

Profile trophy heads

Profile trophy heads have their peak of popularity in Middle Nasca (Plates 48-50) and Late Nasca (Plates 51-52). Only few Early Nasca profile trophy heads are known (Plate 47).

Realistic profile Trophy heads
Variation among the profile trophy heads is larger than among the frontal trophy heads. But, it is possible to define some major categories within the Palpa sample that might be important to the discussion of chronology.

Profile trophy head with trapezoid head

(Plate 49) This category is restricted to Middle Nasca. It corresponds to Proulx's Early Profile Trophy Head (Proulx 2006:105, TH-1-B, Fig. 5.86). The shape of the head is somewhat ovoid. Nose, eye and mouth are clearly identifiable. The eye is semicircular and excentric. The nose is pointed and may have a cleft point. The mouth is U-shaped or rectangular. In some varieties the nose is merged with the mouth line; other varieties have a high nose that is not connected with the mouth. Below the rounded ear one single rectangular braid may fall down. The trapezoid headdress is always contrasting in color with the face. A variation is executed in solid colored fashion, without outlining (Plate 49: 10-11).

Profile trophy head with black hair lobe

The head features a single black lobe corresponding to the several lobes seen on frontal trophy heads. A carrying rope may be attached. This variety occurs in the Palpa sample usually in turned position, with the nose pointing up. The eye is closed, a curved slit line, but the few Early Nasca examples have opened eyes (Plate 47: 1, 2, 4, 5, 6). One or two braids may hang down below the ear. The mouth is also a slit line mouth. The position of the nose is usually high, not merged with the mouth line. This trophy head is principally Middle Nasca related, but has its antecedents in Early Nasca frontal trophy heads and in the few known profile examples.

A minor category is a distorted trophy head that lacks the symmetry of the other trophy heads within this category. The head is slightly curved; the slit line eye is hardly recognizable and the pronounced nose is merged with the slit line mouth (Plate 48: 11). This trophy head resembles some Late Nasca features and may be chronologically significant.

Square profile trophy head

A square variety of profile trophy head is included in figures like mythical birds or in the streamer of the AMB theme. It has a semicircular eye and a U-shaped mouth. The nose is omitted or flat. Braids and headdress are not depicted. On one example hair hanks are attached. The only Early Nasca Example has the shape of a regular rectangle (Plate 47: 3), while the middle Nasca examples tent to be more irregular trapezoid in shape (Plate 50). This category is especially characteristic for Middle Nasca. Few examples represent the Progressive Monumental mode of Middle Nasca pottery (Blagg 1975) characterized through the appendage of hair hanks (Plate 50: 1-3, 7).

Stylized cursive trophy head

(Plate 52) A highly stylized variety of trophy heads is characterized by a hasty flowing outlining, sometimes open at the base. The interior details like eyes and mouth are simple dashes. The nose is little pronounced and pointing up. The braids or hair of this variety are also very characteristic, being constituted by several diagonal parallel lines. This trophy head is always arranged in a horizontal frieze, usually below the vessel rim. It can be filled with alternating colors. There is no corresponding category in Proulx (2006). Wegner (1976) illustrates some very similar trophy heads. They are restricted to the Late Nasca sample from Parasmarca.

Stylized trophy head with elaborate headdress

(Plate 51) The shape of the face approximates a rectangle with rounded corners. The nose is little pronounced. The eye and mouth are small dashes. The head is always painted in turned orientation with the nose pointing up. To the right it as a headdress attached that is nearly as high as the trophy head. It is constituted by several parallel joined bands with rounded ending. The hair or braids hanging down form a solid block below.

Minor varieties

A minor variety within the Palpa sample but not necessary in Nasca art is a realistic trophy head with an elongated eye, a pronounced hooked nose and an open mouth with depicted teeth (Plate 51: 7). The eye resembles the girl faces eyes. It is clearly Late Nasca related, but more examples are needed to identify a pattern. This variety is known from several elaborate Late Nasca vessels.

Another example from Parasmarca is developed from the profile trophy head with black hair lobe (Plate 51: 6).

Objects

Viscera

(Plate 53) The unique component is a row of solid colored ovals that are linked. Design is typically on the interior bottom of the vessel. Two or three rows of this design are present on one vessel. These can be of one single color or in alternating colors. On one example from Palpa red dots are present as a background filling, linking this design to the Late Nasca black dots (Plate 136). This design is characteristic of Middle Nasca as it represented in the present sample only at La Muña.

Sling

(Proulx 2006: 173, OBJ-1-B)

(Plate 54) Most slings in the sample are Early Nasca related. The middle section is diamond shaped or in shape of a pointed oval. The filling can consist of a segmentation line dividing the section in to areas, filled with a bi-color floating-color filling; or the filling consists of a cross hatched design. Middle Nasca slings vary slightly from this scheme (Plate 54: 11, 12). Background color is usually black. One specimen has a dark red background; another from the Middle Nasca period has a white background (Plate 54: 8). Two examples are head jar fragments (Plate 54: 9, 10). The middle section is not preserved; the string is elaborated with black details like V-shaped segmentation or a middle line. There are no Late Nasca Slings.

Darts

Proulx 2006: 172, OBJ-1-A)

(Plate 55) The representation of darts is mainly restricted to Middle Nasca. For some of the examples from Los Molinos the stratigraphic position indicates that these correspond to a later moment of occupation of the site (Plate 55: 2-3).

Darts are bands that usually have diagonal segmentation lines and a triangular or V-shaped point. The shaft is generally colored; it can even be bicolored.

The point can be decorated with a dot face.

The orientation of the darts is mostly horizontal, in flying position. However, vertical darts occur; some can be bundled as held in a hand. In some instances darts are attached to bands in the manner of geometric design elements.

Animals

Animal themes include mammals, reptiles, amphibians and insects. Birds and fish are classified apart due to the amount of representation. The distribution of animal representation among the sites indicate that most of these themes date to Early and Middle Nasca period, only a few characteristic ones to the Late Nasca period.

Fox

(Proulx 2006: 141, ANM-1-A,)

(Plate 56-57) There are 20 representations of foxes present in the sample. The most important components are feet, teeth, ears, pelage marking, whiskers, and associated figures. Design differs clearly on the feature level. There appear to be some temporal significant design traits, and a differentiation of this theme between Early Nasca and Middle Nasca seems possible (see below).

The jaws are generally straight sided, with few examples presenting concave sided jaws. Whiskers are attached to the upper side of the jaws (the outlining). On some occasions they can be attached to the lips. Teeth are represented in Early Nasca by black dashes or a zig-zag line (Plate 56: 5, 6, 8). Middle Nasca teeth are depicted as a black horizontal line or also as black dashes (Plate 56: 10; 57: 1-3, 7, 8). Ears can be spiked (Plate 56: 3, 7; 57: 4, 5) or rounded (Plate 56: 1-2; 57: 3); their shape does not present a chronological pattern.

All four legs are depicted. The design of the paws is very variable. Early Nasca paws seem to be more thoroughly executed (Plate 56: 2). The body often features a horizontal segmentation, with the belly sometimes painted in a lighter color. Horizontal dashes as a pelage marking are usually present in Early Nasca (Plate 56: 1-3, 9). The tail has the same color as the back in early Nasca (Plate 56: 1-3), while it is generally solid black in Middle Nasca (Plate 57: 1-2). In Early Nasca the background color is often red (Plate 56: 1-3, 6), while in Middle Nasca the predominant background color is white (Plate 56: 10; 57). The nose can be depicted as a black spot.

Associated designs can be a segmented band, possibly a snake held by the mouth (Plates 56: 5; 57: 6), and an undefined bird, probably some kind of vultures, sitting on the fox's back (Plate 56: 1).

Several fragments of one vessel show separated heads of an undefined animal. According to the whiskers and the shape of the head these may be fox heads.

One example of a sculptured fox head is known from Los Molinos (Plate 56: 8). Teeth are represented by a drawn zig-zag.

At Parasmarca the fox theme is not present. Apparently the theme had lost importance after Middle Nasca. The absolute frequency differences between Early Nasca and Middle Nasca are best explained by sample size.

Camelids

(Proulx 2006:143, ANM-1-C)
(Plate 58: 3) Depictions of camelids or llamas are rare in the sample from Palpa. There is one Middle Nasca example from La Muña included in this study. In contrast, Proulx (2006:144) states that "camelids are one of the most commonly depicted animals in Nasca art". He gives no details about the chronological placement of this theme. The three examples depicted by Proulx (2006: Fig. 5.182-5.184) are obviously Middle Nasca, but are different to the present example.

Rodents

(Proulx 2006:144, ANM-1-D)
(Plate 58: 1-2) Rodents are characteristically arranged in multitude in Nasca art. There are two examples of rodents in the Palpa sample. One case features several rows of small rodents, with a small solid black body with an eye and dots resembling the feet. Another fragment has a small application at the rim, equally limited to a small black body with a round dot eye. The associated design from the vessel wall is corn.

Worm

(Proulx 2006:162, INCT-1-B)
(Plate 58: 4-7) The shape of the body of this figure, a characteristic spiral band filled with white dots, is the basis for interpreting it as a worm. The head is large and round with dot eyes and oval mouth and shows no specific worm attributes. The conical hat worn by this creature might be interpreted as suggesting a connotation with agriculture (Proulx 2006: 162). The term *worm* coined for this figure is primarily a classification term that allows cataloguing together all specimens sharing the principal characteristics of this theme. The interpretation of iconography is of secondary importance to the present study.
The design has been documented principally in Middle Nasca contexts, including the upper layers of Los Molinos. However there is a matching sherd from a lower Early Nasca context (Plate 58: 4) that suggests an earlier occurrence of this theme. Changes are minimal and sample size is too small to define a pattern.

Spider

(Proulx 2006:161, INCT-1-A)
(Plate I.3: 4) The body is characteristically segmented in two parts with a third part forming the head with dot eyes and ovoid mouth. The eight curved legs are diagnostic for identifying this animal as a spider. The unique example from Palpa has a close resemblance with one from Cahuachi (Kroeber/Collier 1998: Fig. 112).

Lizards

(Proulx 2006:158, RPT-1-C)

(Plate 59) The components of the lizard theme are the body, eyes, feet, and head. However, most characteristic of the lizard theme is the long tail, not preserved on these fragments.
The head is characteristically pointed. Body and feet are similar to those of toads: striped body and trident or four-dent feet without outlining. The body is slimmer than in the case of toads, but on fragmented pottery often only a small section of the body is preserved. Therefore the classification as a representation of a lizard is based principally on the characteristic head (Plate 59: 6, 8, 10, 13).

Toad

(Proulx 2006:157, RPT-1-B)
(Plate 59) The toad theme can be identified for its vertically striped body with short curved legs attached and a rounded, only slightly conical head that is not clearly differentiated from the body (Plate 59: 4, 5). On fragments confusion with the lizard theme might occur due to the striped body and the trident or four-dent feet. The toad's body is bigger, the head is less conical and not clearly pronounced, and toads have no tail.

Pollywogs

(Proulx 2006: 159, RPT-1-E)
(Plate 60: 7) Depictions of pollywogs consist of a simple small black spot that may be half circle shaped, and a dash. These represent head/body and tail of the larvae of amphibians in their earliest stage. They are always depicted small and in large quantities. In the present sample there is only one Middle Nasca example from La Muña present

Tadpole

(Proulx 2006: 159, RTP-1-D)
(Plate 60: 1-6) Tadpoles are characterized by a rounded head/body with circle and dot eyes, an ovoid mouth, and with an attached tail. Legs are characteristically rounded and jagged. Eyes and mouth are circle and dot. The Early Nasca examples (Plate 60: 1-2) are simpler than the Middle Nasca ones (Plate 60: 3-6).

Snakes

(Proulx 2006:157, RPT-1-A)
28 depictions of snakes could be identified in the sample. The ways of depicting this animal are very variable. The definition of subclasses is possible. But still most snake designs share some characteristics that permit the classing together within this category. Snakes are most frequent in Early Nasca.
The long body is a characteristic component, often with dots or ball and chain design (Plate 61: 2-6). Eyes are laterally attached on some occasions. The tongue is often extended. Arrangement can be intertwined (Plate 61: 2, 6), S shaped (Plate 62: 1-2, 3-4)

or just curved and depicted alone. The more elaborate examples have a complex iconography (Plate 61). These elaborate varieties may also feature ears (Plate 61: 7, 8), semicircular radiating bristles beside the body (Plate 61: 7), or even a spiked body (Plate 61: 6). There is a gradual interference with the serpentine creature theme. The classification depends on whether the animal characteristics prevail or the mythical characteristics (see serpentine creature). Probably not all fragments can be classed unambiguously in one of the two classes.
Other snakes are simple, featuring a band with a middle line and some dot eyes and mouth (Plate 61). This is the case with the S-shaped snakes; the category is similar to the component snake feathers (Plate 29).
Some examples of sculptured snakes are known (Plate 62: 10).
A unique example shows interlocking snakes, with trapezoid head, dot eyes, the body bifurcated in a Y manner (Plate 62: 11). The body is an orange band with a black jagged border. Proulx (2006: 156, FISH 3) interprets this theme as a representation of a fish.

Birds

Undefined bird

Most fragments recognizable as parts of a bird design are not sufficiently specific to be defined as a concrete species. This categorization is easier with complete pottery designs. Many features, especially the depiction of the wing, are shared by several species and for chronological interpretation it is better to regard all bird designs together in order to dispose of a larger sample size for comparison. However, below some characteristic species will be presented.
The principal characteristics of Early Nasca Birds have been resumed in Proulx (1968). Not all of the features defined are easily observable on fragmented pottery. In the Palpa sample the most striking characteristic of Early Nasca birds is that the wing is generally represented in colored panels divided by vertical segmentation lines. There are short perpendicular dashes attached to the segmentation lines that generally do *not cross the segmentation line* (Plates 65). Interestingly, the hummingbird representations present an exception to this rule. Some bird depictions occur on a red background (Plates 65: 5, 10; 66: 9). The bodies are consist of colored panels but are *not ornamented* with dots or stripes (Plates 65, 66)
For Middle Nasca birds there exists no comparable analysis f the bird design. The best source is Proulx's (1968) analysis of Nasca 4 bird designs. For the Palpa sample the following Middle Nasca characteristics can be defined. The segmentation lines of the wing are often horizontally crossed (Plates 67-69). The body is often ornamented with dots or stripes (Plates 67: 4, 8; 68: 6; 7; 9-11; 69: 12, 16). Birds appear as minor design theme or are restricted to a small panel (Plates 67: 1; 68: 4, 8; 69; 14). The head is sometimes turned up and may the beak may be touching the rim decoration (Plates 68: 4; 69: 12, 14). The design is often crowded and touching the rim decoration, lower border or nearly overlapping the other figures depicted in the frieze (Plates 67: 5, 6; 68: 1, 2, 4, 5, 7, 9, 11; 69: 12, 14, 15; 23). The legs may be extended into the colored area of the body (Plate 68: 3, 4).

A rare variety of Middle Nasca birds features a wingless black body ornamented with dots or loops and sometimes associated to what appear to be plants. This design is very different to the earlier design conventions for depicting birds (Plate 71: 5-7).

Duck

(Proulx 2006: 133, BIRD-1-D)
(Plates 61, 62: 1-3) Duck representations are restricted to Middle Nasca. The design is composed of a series of very diagnostic features. The body and wing are presented as colored panels floating on a dark background, giving the false impression of a negative design (false negative because the lighter color had been applied above the darker background and is not an area that had been left undecorated). The spaces between the wing panels resemble the segmentation lines common on other wings. On all known examples of duck representations from Palpa these segmentation lines are horizontally crossed a feature characteristic to Middle Nasca birds. The body is a white curved band mostly filled with red dots. The beak is angular U shaped and is characteristically humped on many examples. The eye is a large circle and dot eye and is not joined with the head/neck; the head is not differentiated but only curved around the eye.

Garza

(Proulx 2006: 133, BIRD-1-C)
(Plate 64: 4-109) The garza is a long necked Peruvian water bird. This is a frequently depicted bird in Nasca art. The design is highly diagnostic in comparison with other bird designs. The most outstanding feature is the long curved neck. In Early Nasca it is depicted meandering in several arches. The length of the neck is thereby often stylistically distended. The head is small and rounded with a circle and dot eye; the head is turned down (Plate 64: 4). At La Muña some Middle Nasca fragments have been documented with a similar white bird that has white body with a white wing that is not segmented (Plate 64: 8, 10). The beak is angular U-shaped and not joined with the head, a feature shared with the duck representations known from La Muña. Also the eye is not joined and it is surrounded by a semicircular head, direct extension of the neck. This bird has been tentatively classed in the garza-category here. It shares the same characteristics of body, wing and orientation of the head. Only the reduced length of the neck is more realistic. The design is smaller (half the size of the Los Molinos examples) and in the examples known it is arranged in several (two) rows or in a narrow panel at the upper part of the wall. It represents the Middle Nasca variety of this theme.
A third variety that fits into this category is also Middle Nasca related (Plate 64: 6-7). It has the same characteristic body and wing and a meandering neck, but the head is elevated. This variety shares characteristics of the two others: The angular U-shaped beak of the short necked variety from La Muña and the meandering long neck of the variety from Los Molinos. The garza design with elevated head is also known from Uhle's excavations at Ica (Proulx 1970: F4-2, F11-b2), but in these examples the head surrounds the eye and the beak is not linear.

Hummingbird

(Proulx 2006: 132, BIRD-1-A)
(Plate 66: 4-7) The components are beak, eye, wing, feet, pouch, head, wing, and wing feathers. The small sample of clearly identifiable hummingbird representations comes exclusively from Los Molinos. The outstanding characteristic is the long and thin beak. Apart from this, the hummingbird can be easily confused with other depictions of small multicolored birds. The limitation of the design to EN in the Palpa sample is certainly due to sample size. There are some Middle Nasca hummingbirds known from Nasca pottery, for example with their beaks being attached to a band (e.g. Seler 1923: Fig. 280). But, as Proulx (2006:132) remarks: "Most are found in Phase 3". A rare design (Plate 66: 4) presents a characteristic long hummingbird's beak; therefore it is included in this category. The wing is recognizable, black, with red and white panel. The segmentation lines are not crossed. The body is not clearly depicted; in its place there are some vertical wavy lines. The eye is not depicted or may be interpreted as closed eye. Below the beak there is a small cross hatched area and two ovoid colored areas, dark red and red. One of these might be interpreted as a pronounced pouch. The net like cross hatching suggests a representation of a dead hummingbird caught in a net.

Owl

(Proulx 2006: 137, BIRD-1-O)
(Plate 70) The principal characteristic of this theme is a colored curved band without outlining that forms the contour of a figure. The background is always black. Because of the presence of eyes the figure can be interpreted as a head. The interpretation of this design is unsure: Proulx (2006:137) interprets it as an owl, while some suggest it could be a nutria representation (Valcarcel 1932); Proulx (2006: 152) suggests that some of these representations might also be interpreted as a frontal representation of a crustacean. No matter the interpretation, it is important to be consistent in the classification to be able to compare comparable designs. At Palpa this design is clearly Middle Nasca related.
One similar Early Nasca design shows the same characteristic contour, but combined with an ovoid mouth. It is more similar to a trophy head. Still it has been grouped here because of sharing the characteristic contour (Plate 70: 8).

Parrot

(Proulx 2006:135, BIRD-1-K)
The most characteristic feature is the strong curved beak; other components such as body, wing and tail are similar to those of other birds. The few specimens identified in this category come from Los Molinos (Plate 71: 1-2) and La Muña (Plate 71: 3-4)). In the depiction from La Muña a change in the iconographic canon can be noted: Body, head, and wing are depicted in one single color and not in a segmented fashion.

Swift

(Proulx 2006: 133, Bird-1-D)
(Plate 72) The swift design is very characteristic in showing the bird in a flying position with the legs spread to both sides of the tail and the wings spread to both sides of the

body (Plate 72: 3-8). Other important features are: the split tail, sometimes combined with a circle and dot anal section comparable to the loincloth observed on some mythical birds (Plate 72: 5, 6, 7), and finally the semicircular collar depicted in a contrasting color (Plate 72: 3).
The sample of swift designs from Palpa is very variable. The beak is often very stylized and nearly not recognizable as a beak, but only through comparison with less stylized varieties of this theme (cf. Proulx 2006: Fig. 5.155, 5.156). On fragmented pottery the bristles in combination with the large eye of varied shape are a good diagnostic in identifying the theme (Plate 72: 1, 3).
The tail can also be of trapezoid shape (Plate 72: 2, 4). A late example is identifiable only through the prominent central eye and the lateral legs; the body and wings are disarticulated black (Plate 72: 9).
The small sample from Palpa is too variable to define valid subcategories. Examples are known from Early Nasca to Late Nasca. A better definition of the temporal distinct traits based on a larger sample may be possible.

Crested bird

(Proulx 2006: 137, BIRD-1-N)
This is a bird of undefined species characterized by the jagged upper part of the neck and by a long, straight and strong beak. In the Palpa sample there is only a small fragment present that does not permit any more concrete description (Plate 66: 1).

The striated heron

Proulx 2006: 135, BIRD-1-J
The head with the large long beak is very diagnostic for this large water bird, as is the body with irregular red spots. The feet are large, as if adapted to the water. Other details are not preserved on this unique example from Palpa (Plate 68: 9).

Fish

In Nasca art a series of different fish can be easily differentiated (see Proulx 2006: 151ff). In the Palpa many of these variations have been documented. Of these, three kinds of fish are of special significance to the chronological investigation because of being the varieties that occur in a considerable amount.

Straight fish

(Proulx 2006: 152, Fish-1-D)
The straight fish is a small elongated straight fish with the upper and lower parts of the body depicted in contrasting colors and separated by a median line or a gap. It has been interpreted as an anchovy (Proulx 2006). These fish are generally painted on a dark, mostly red, background. Variations occur in the shape of the tail fin, the length of the other fins, the number of gill slits and in the color scheme. Also the orientation varies between horizontal and vertical. The theme is widely restricted to the Early Nasca sample from Palpa. However, no clear pattern can be identified that would allow

defining subclasses (Plate 73). The few Middle Nasca straight fish are characterized by the presence of white dots as background filling (Plate 76: 1, 2, 4), probably representing water (Proulx 2006). The eye may be attached above the body line (Plate 76: 1) a feature similar to the eyes of Middle Nasca ducks. The color scheme has changed slightly, the fish now being mostly red and orange or red and white in stead of black or gray and white (Plate 76: 1-5). Some of the small Middle Nasca fish are not straight , but slightly curved (Plate 76: 3, 5) representing a kind of synthesis of the small Early Nasca straight fish (Plate 73) and the larger strongly curved fish (Plate 74).

Banded fish

(Proulx 2006:153).

The most frequent variation of the fish theme is the banded fish. It is a stylized variation of fish common in the Middle Nasca sample from La Muña. These are arranged normally in a vertical position and repeated in a frieze all around the vessel. The body is a simple black oval; the fins are short transversal lines crossing the body. The eye is a central circle and dot eye. The tail fin is also trapezoid shaped. These fish are usually arranged in vertical position in a horizontal frieze. The body can be filled with regular lines and dashes in red and white. While some designs within this category are clearly identifiable as representation of fish, others are more abstract (Plate 75).

Late abstract fish

(Proulx 2006:154)

Another variation has been denominated *late abstract fish*. These have the contour of a pointed oval, with the endings crossed to form the tail. The interior of these fish is decorated by short parallel lines. The fins are short attached half circle lines. Late abstract fish are generally painted in white or crème on a red or dark red background. One rare example is painted on a crème background and the design has no color filling of its own (Plate 77).

Fish, minor categories

Other minor categories occur but are unique representation in the sample. Among these there are some curved fish. Small curved fish are depicted in a horizontal frieze. These are very similar to the anchovy but slightly longer and curved.

A design of a large curved fish is known from the interior of bowls. The fish is generally three colored, composed of three bands. The innermost white band is filled with dots. The background of the examples from Palpa is white.

Realistic variations of fish are common at Early Nasca Los Molinos (Plate 74), while they are rare at La Muña (Plate 76), and at Parasmarca there is no representation of fish different to the late abstract fish.

Crops or fruit

Ají

(Proulx 2006: 165, PLT-1-C)
On feature level there are several differences in the design. Ají can be striped or solid colored, with further differences in background color, size, contour and orientation.
In Early Nasca some variations of striped ají occur. These can have dark red stripes and a black contour on a white background (Plate 78: 1-5). A very similar design occurs in Middle Nasca (Plate 78: 6-13; 79: 1-4). The differences cannot be defined for all varieties. There is a tendency that the Early Nasca specimens are smaller, in absolute terms and in relation to the design area. They have only about four horizontal stripes and the contour is rounded with a slightly upturned tip. The clear Middle Nasca specimens have a more angular contour and are comparatively larger as may be expressed also in the augmented number of stripes. However, it is difficult to draw a concrete boundary. A variety, in the study sample restricted to Middle Nasca, has black and dark red stripes or even black, dark red and red stripes.
A second category of Early Nasca ají representations have a red, dark red or black background (Plate 80). Contour outlining is mostly black, in few occasions and on black background it is white (Plate 80: 6, 8, 6). The shape of the ají and the number of stripes is similar to the white background category. Rare examples have a solid colored filling (Plate 80: 4); a floating color filling (Plate 80: 10) or lack an outlining (Plate 80: 2). In this case the difference towards Middle Nasca is more difficult to define (Plate 81). The design might be interpreted as transitory from Early to Middle Nasca.
Solid colored ajís that are strongly curved and that are depicted on a white background are widely restricted to Early Nasca (Plate 82: 1-5), but they may later occur in miniature as a minor theme (Plate 82: 6).
A characteristic Middle Nasca trait is the ají consisting only of parallel bands that may be horizontal (Plate 79: 11) or vertical (Plate 79: 8; 82: 7-10).
Also in Middle Nasca small vertical ajís occur (Plate 83). These are generally solid colored in alternating colors with black contour and few black stripes; the stem may be attached to the rim decoration. Shape differs slightly; the stem may be a short colored band.
From Late Nasca no realistic representations of ají are known. Maybe the small rectangles (Plate 136), sometimes with one or two stripes upon can be interpreted as a stylized ají. A transitory design can be found in the Bizarre Innovation Style (Roark 1965: Figs 46, 47).

Bean

(Proulx 2006: 164, PLT-1-A)
The bean design has its origin in Early Nasca and is present in a considerable quantity until Middle Nasca. Some characteristics of Early Nasca beans persist until Middle Nasca, where they occur together with more innovative variations. Generally, the bean is depicted as a rounded crop with the most diagnostic trait being the *eye* or *hilum*: one or two half circles with a dot attached to the inner contour. The tip is triangular in shape. Often it is solid colored, with the color being the same as that of the contour. The filling features the greatest variation.

In Early Nasca two major variations are present: A bean with a floating color filling (Plate 84: 1-7) and a smaller category with a linear filling in shape of a turned B (Plate

86: 2-4). The latter is restricted to Early Nasca, while the floating color filled bean is present to a considerable amount in Middle Nasca contexts (Plate 84: 8-10; 85).
Striped beans occur in Early Nasca and Middle Nasca (Plate 87). Some more minor varieties are present in Early Nasca (Plate 86: 1, 6, 7-10). The outstanding characteristics of these varieties will have to be defined in basis of a larger comparative sample.
A good Middle Nasca diagnostic is the presence of red dots on beans (Plate 88: 1-6), a feature often present on small beans with an upturned tip.
Minor Middle Nasca categories also require some further definition based on a larger sample (Plate 88: 5-7).

Bean pod

(Proulx 2006: 164, PLT-1-B)
(Plate 93) Few examples of bean pods are present in the sample. They are elongated and slightly curved, and segmented; orientation is mostly vertical. The sample is too small for a profound temporal analysis. In Early Nasca beanpods can be solid colored with or without outlining (Plate 93: 1, 3, 5); one rare example has a horizontal orientation and the segments are filled with colored loops (Plate 93: 1). In Middle Nasca bean pods are also solid colored with or without outlining (Plate 93: 4, 6).
The Late Nasca examples are red with black outlining or solid colored black (Plate 93: 7-8). They are associated with black dots (see Plate 136). There are generally few depictions of crops in Late Nasca, the bean pod being one of them.

Cactus fruit

(Proulx 2006: 167, PLT-1-H)
A small rounded fruit with red dots and a tripartite stem has been interpreted as a cactus fruit. This design is restricted to Middle Nasca (Plate 94: 1-5)

Corn

(Proulx 2006: 165, PLT-1-D)
The representation of corn is highly diagnostic. The contour is rectangular, mostly with concave sides. Some specimens have straight sides. The tip with the grains is a half circle with red or black dots. The design of the leaves is variable. There are principally three varieties: 1) the leaves are designed as floating colored elements, in two different colors. There is a middle line in the color of the contour that divides the colored areas (Plate 89); 2) the leaves have a solid colored filling with a black X design above (Plate 90: 1-7, 9); 3) the leaves have a solid colored filling and the inner segmentation is provided by a middle line and to curved lines attached to the inner contour (Plate 91).
The grains can be design in dot face manner, resembling a trophy head. The hair at the tip of the corn stalk can be diagonal crossed or it is designed as a solid black rectangle similar to the trophy head's braids. A further variation is characterized by having only one braid hanging down.
Within the second category some miniatures occur. These can be further linked to a miniature variety with solid colored filling and one or three stripes. The corn design is

mainly a Middle Nasca theme. Few Early Nasca examples might occur (Plate 89: 1-2) indicating that the floating color variety can be interpreted as the earliest.
Many small fragments can be classed as a corn design, not all being attributable with exactitude two one of the above described categories (Plate 92). A striped corn presents a minor variety.

Lúcuma

(Proulx 2006: 165, PLT-1-E)
The most outstanding characteristic for identifying this theme is the presence of two or three large seeds as a filling. The shape of the fruit permits the attribution of some solid colored or contour only specimens to this category. The Lúcuma design is known from Early Nasca (Plate 94: 6, 7; 95: 1-4) and Middle Nasca (Plate 94: 8-10, 95: 5-11). The small sample does not show any temporal pattern. Maybe the design can be interpreted as transitory from Early to Middle Nasca.

Undefined crop or fruit

Several fragments can be identified as a crop or fruit for sharing characteristics like the contour, the filling, or the existence of a stem, but the fragmentary condition does not permit any more concrete classification. All these minor categories are Middle Nasca (Plate 96). Some might be variations of the bean (Plate 96: 5, 8); corn (Plate 96: 9)and ají (Plate 96: 6-7).
One example can be classed as a heart shaped fruit (Proulx 2006) with a characteristically split stem is included in the sample (96: 1).

Geometric

There are several classes of geometric design in Nasca iconography. The classes are defined according to the geometric shapes. A special attention will have to be paid to the definition of chronologically valid subclasses. A comprehensive presentation of some of the geometric themes in Nasca iconography is hindered by the fact that basic geometric elements can occur as an iconographic theme of their own, but more frequently are combined with other design themes. Lines and bands for example serve to divide the design area or as a part of another theme like a streamer or snake feathers. The circle and dot design is used to represent eyes of several figures, or the bangles of the AMB theme. On fragmented pottery it often cannot be decided whether a geometric element preserved is part of an individual theme or if it is part of another design. In the database queries geometric elements have be searched for under theme, component and feature in order to access to all geometric representations documented in Palpa. However, the following account concentrates upon the well preserved geometric designs.

Lines and bands

As a definition, lines have approximately the strength of the outlining present on most Nasca designs. Bands are comparatively broader. Both geometric shapes are here grouped together because they often occur together. Further distinctions are possible by

a series of criteria. The implementation of certain criteria to define subclasses will be decided considering the stratigraphic information. Important criteria are – among others - the orientation (vertical, horizontal, and diagonal), the color scheme, the arrangement (e.g. joined or separated, with outlining, alternating, only bands, only lines), and the association of other design themes. Wavy bands and lines are also included in this category, as are bands or lines that have a specific border. Borders can be spiked, serrated, undulated or fringed. In this aspect there is a classificatory interference with the spiked streamer category.

Parallel **horizontal bands** are rare in Early Nasca (Plate 98: 1), but gain importance in Middle Nasca (Plate 98: 2-8; 99). In Late Nasca this arrangement of bands is again widely absent (Plate 101: 1-2).

Vertical bands occur in all phases (Plate 103-106). In Early Nasca broad colored bands are divided by white lines (Plate 103: 1, 2, 4). This feature is not very common in Early Nasca but seems restricted to this period. Another characteristic design is a scalloped horizontal band at the lower border of the design area; the spikes merge in vertical black lines that nearly reach up to the rim (Plate 103: 7-9). On interior painted bowls the inner wall is sometimes decorated with vertical double lines (Plate 103: 5). A unique specimen features vertical black lines with a red spot at their top (Plate 103: 6).
A very diagnostic Early Nasca design consists of vertical colored lines and a vertical spiked band on a black background (Plate 106: 1-4).

In Middle Nasca there is a larger variety of vertical bands and lines, often irregularly alternating above a white or light background (Plate 103: 10-12; 104: 3, 7-11). Additionally undulated bands may appear (Plate 104: 9-11). Some colored bands have a black outlining (Plate 104: 7, 9, 11). A further variety is a series of black bands on the interior or exterior of vessels (Plate 104: 1, 2, 8). Double lines also occur and may be white or colored (Plate 104: 3, 4, 6).
Apparently restricted to Middle Nasca is an easily identified theme of vertical lines alternating with piles of white dots (Plate 106: 5-10).

Late Nasca bands always have an outlining when they are colored. Vertical bands can be combined with vertical black lines. The bands can assume a slightly trapezoid shape Plate 105). Another frequent use of bands in Late Nasca is for a division of the design area, partially replacing the earlier vertical division line (Plate 105: 12; 136: 1, 3, 5, 10).

Diagonal lines constitute an infrequent theme. They are most frequent in Late Nasca (Plate 97: 4, 5, 7, 8). However the small sample size does not allow any further conclusions and Diagonal lines are known at least from Early Nasca. One example of negative painted diagonal lines has been documented at Estaquería (Plate 97: 1) and is an example of Initial Nasca geometric design.
Parallel horizontal zig-zag or wavy lines and fishbone design constitute infrequent Middle Nasca themes (Plate 97: 6, 9-13).

A short horizontal **wavy line** on the rim occurs in combination with plain vessels as well as some specific theme. When combined with a design theme, the rim and the

design area are always black; this design is restricted to Middle Nasca (Plate 100: 7-11). On plain vessels the rim can be of a lighter color than the remainder part of the vessel. The design is also most frequent in Middle Nasca (Plate 100: 2-6), although there is one stratigraphically clear Early Nasca example that is stylistically not distinguishable (Plate 100: 1).

A very characteristic theme is vertical **piles of short curved lines**. The lines are painted in white over a black background and have a washed appearance. This design has been recorded only for Middle Nasca at La Muña (Plate 102).

A broad band with wavy border and without outlining upon an outlined panel is the most frequent coarse ware decoration (Plate 107). Examples occur especially at Los Molinos and La Muña. The unique example from Parasmarca would best be interpreted as mixed in Middle Nasca material. A subdivision of this simple design on such a small sample size is not possible.

Balls

Balls are defined as large solid colored objects – opposite to circles that consist only of the contour. Balls can all have the same color or may have alternating colors; they are unoutlined. There is no clear change in the pattern, nearly all have a white background, combinations occur with black rim or without rim decoration. Arrangement is always a frieze; a vertical division line may or may not be present. One variation is smaller in size and the panel is bordered by a colored band with black outlining. Some Middle Nasca examples have a double vertical division line. One of these specimens has a black background. The ball design is known from Los Molinos, apparently related to the uppermost layers (A-C) of the stratigraphy (Plate 108: 1-6). Most balls are Middle Nasca related (Plate 108: 7-12; 109: 1-7). Balls usually occur on vases.
A related category is a frieze of irregular linked balls; only two specimens from Los Molinos are known (Plate 109: 10-11). Other minor categories are a frieze of negative painted balls combined with other geometric designs (Plate 109: 8), and an outlined ball with parallel wavy lines attached (Plate 109: 9).

Chequered

(Proulx 2006:182, GEOM-1-G)
Chequered designs consist of solid black squares alternating with the white background (Plate 118). Another variety lacks the solid colored black fields, but the squares can enclose other geometric elements like diagonal wavy lines or steps (Plate 117). The chequered design is closely related to the cross hatching design.

Cross hatching

Cross hatching can be diagonal or vertical/horizontal. Generally the space between the lines is small, causing a net-like appearance. In some occasions the space is larger and the interim space can be filled with other geometric figures. This latter variety is related with the chequered design. Cross hatching occurs as a design of its own, but it can also

represent nets for fishing and hunting or used as a bag or a headdress. The examples from Palpa fall into Early and Middle Nasca periods. A definition of further subcategories would rest on associated designs and therefore problematic for fragments. No clear chronological development can be defined (119-122: 1-5).

Circle and dot

Circle and dot designs occur in a large variety of arrangements, as horizontal rows, vertical piles, isolated, or included in other figures. Small circle and dot designs are frequently representing animal eyes.
Isolated circle and dot occurs in Initial Nasca in incisive technique; it is a relict from late Paracas times (Plate 110: 1).
Early Nasca circle and dot designs occur in form of several colored concentric circles (Plate 110: 3-4). In Middle Nasca a comparable design is much simpler (Plate 110: 5). Smaller circle and dot designs occur in a frieze or covering the complete design area in irregular rows (Plate 111: 1-2).
Middle Nasca small circle and dot design is sometimes placed on or between bands, or it is arranged in regular piles (Plate 111: 3-9).
In Late Nasca only the larger circle and dot design is present. The circles of this design are sometimes replaced by diamonds and the interim space is filled with characteristic vertical dashes or curved lines (Plate 110: 7-9).

Crescent

A crescent is defined as a curved semicircular figure. As an independent theme it is arranged always in a horizontal frieze, solid colored and without outlining. The convex side of the crescents points up, contrasting with solid colored ají where the convex side is down. The design can be confused with half circles or balls. This theme is always executed in a solid colored fashion without outlining. It seems restricted to some Early Nasca bowls and might constitute one of the earliest designs (Plate 128: 8-11).

Crosses

Crosses are generally linear designs included in other figures. Most crosses have been registered on the component and feature levels. The crosses presented here as geometric theme are all unique and do not serve for further chronological subdivision. Early Nasca crosses have been observed only as a filling of the diamond theme (Plate 123: 4-5). All isolated examples are Middle Nasca related (Plate 122: 6-8). In Late Nasca crosses occur as a stepped cross (Plate 118: 9-11) or also as a filling in the diamond theme (Plate 123: 6-10)

Diamonds

Diamonds are arranged in a horizontal frieze. There are clear temporal distinctions to be made: Early Nasca diamonds can be defined by two crossing zig-zag lines and have a cross filling (123: 4-5). This design occurs with a black background. Or, Early Nasca

diamonds can be solid colored without outlining, on a white background (plate 1233: 1-3).
In Middle Nasca the predominant way of depiction is with a black contour and a solid colored filling on a light colored background (white or buff). Colors of the filling are alternating (Plate 124: 1-5). One example of this design occurs with a black background and a floating color filling (Plate 124: 6). Other unique varieties occur, as for example merged diamonds, diamonds with a cross hatched filling, with a loop filling, or nested diamonds (Plate 124: 7-10).
In Late Nasca the design resembles the Early Nasca linked diamonds with a cross filling. The difference is that more crosses are painted in the interim spaces. Diamonds in the Middle Nasca scheme also occur. It is not totally clear if these are Late Nasca or part of the mixed in Middle Nasca (Plate 123: 6-10).

Half circles and half ovals

One characteristic category of half circle design is concentric and pendant to the rim. The outermost half circle is generally spiked or with short volutes (Plate 125: 1-6). This design is restricted to Early Nasca with only one Middle Nasca that features small squares attached to the outermost circle (Plate 125: 7). A Late Nasca version is turned with the open side to the bottom and has long Late Nasca related volutes attached to the outermost half circle (Plate 125: 8).

In Late Nasca other half circle designs occur, attached to the inner or outer rim. The examples that are arranged as pendant to the inner often constitute the only design on convex flaring bowls (Plate 128: 8-9). Colored half circles attached to the outer rim are combined with other designs (Plate 128: 10-11).

A pattern of shifted nested half circle lines sometimes combined with dots or circle and dot design is restricted to Middle Nasca. But the sample is small and no further differentiation possible (Plate 128: 1-7).

Vertical opposed half ovals are always solid colored without outlining (Plate 127). Colors can alternate or be the same on one opposite pair. Vertical division lines are generally present, but may lack in some instances. This theme always has a white background and is combined with a broad black lower bordering of the design area. The black band measures several cm. The design is characteristic for Middle Nasca.
A variety of this theme is the depiction of similar half ovals, but not in pairs and with a fringed base.

A half circle line with the open side pointing down, like a turned U, is known from some Early Nasca fragments only. The filling is an irregular red floating color red. The design background can be white or black (Plate 126: 4-7).

Oval

In Middle Nasca some oval loops appear. On the few examples the design is always colored on a black background (Plate 129: 1-3).

A related category is a colored U-band with small oval loops in the interim spaces. The design background is also black and the design is restricted to Middle Nasca (Plate 129: 4-7).

Rectangles

Principal differentiation is possible between solid colored and contour-only figures. The size varies, as does the color scheme. Rectangles may be nested, or attached to other figures. Any fragmented angular design can be misinterpreted as a rectangle.
Among the most characteristic variations are the nested rectangles. These occur at Los Molinos and at La Muña (Plate 130). A definition of temporal subcategories is difficult on the basis of the present sample. Most of the examples are Middle Nasca related. Possibly the design has been introduced toward the end of Early Nasca and continues without major alterations to Middle Nasca.
Small black rectangles and small red rectangles with black outlining are commonly found at Parasmarca (Plate 136). This design is always combined with black dots as background filling and is one of the most characteristic markers for Late Nasca.

Spiral

The spiral is a rare theme in Palpa. Examples are known from Early to Late Nasca and no clear pattern is observable (Plate 135).

Stars

Stars are most common in Middle Nasca contexts (Plate 112: 7-12; 113: 1-8). They are generally arranged in a horizontal panel. Colors can be single colored or alternating. These friezes of stars are generally not combined with other themes, only with decorative bands. Few Middle Nasca stars are depicted as a minor component of complex themes (Plate 113: 6). Another variation is a large star depicted on the interior bottom of a bowl (Plate 113: 8).
The few Early Nasca specimens are slightly larger than the MN. They seem typically arranged in several rows all over the vessel and have a black background (Plate 112: 1-3), but examples on a light background that are difficult to distinguish from Middle Nasca stars occur (Plate 112: 4).
At Parasmarca only few specimens have been documented and a Middle Nasca origin of these cannot be excluded (Plate 113: 7-12). Because of the small sample size for Late Nasca no pattern can be defined.

Steps

Step designs are variable and occur throughout the sequence. Steps differ in contour (or outlining), and filling. Arrangement is generally in a horizontal frieze. It is difficult to define chronologically valid subcategories, but one concrete temporal patern could be identified:

Early Nasca step designs are not combined with other design themes. Background color is predominantly dark – red or black. The filling can be solid colored or linear (Plate 114: 1-9). One example has a red dash filling on a white background (Plate 114: 10).
In Middle Nasca many step design are arranged on a white background and the steps are arranged in several horizontal rows or combined with other themes (Plate 115: 4-11).

Late Nasca steps generally have a white or crème background. They can be colored like in Middle Nasca (Plate 116: 10-12), but these are few examples. Most Late Nasca step designs consist of small stepped piles of parallel black bands. These can be arranged as a pyramidal step or as a diagonal running step (Plate 116: 1-9). Steps occur in combination with other designs, arranged in horizontal panels.

Triangles

The most common triangle design is a row of connected triangles (Plates 133, 134: 1-6). In fact, the triangles are the space defined by a zig-zag line. This space is then filled by a certain pattern. The design is present at Los Molinos and at La Muña. The two examples from Parasmarca are best interpreted as Middle Nasca. The temporal differences between the examples from Early Nasca and Middle Nasca are not so clear: In Middle Nasca often wavy lines on the rim are combined with this design and the filling is somehow irregular as compared with some Early Nasca examples (Plate 133: 6, 8-11). But, there are exceptions and this design is not so easy to place chronologically.
A triangle design restricted to Middle Nasca shows a horizontal frieze of contour-only elongated triangles (Plate 132). The design background can be black or white; one example with a red background is also present.
Other Middle Nasca triangles are solid colored triangles. Large solid colored triangles without outlining are arranged in a frieze below the rim, as the colored balls (Plate 134: 7-9). Smaller triangles have a black outlining and are arranged in rows between colored bands (Plate 134: 10-12).

Some minor categories of triangles have been observed (Plate 135: 1-6). These are restricted to Middle Nasca; due to the absence of comparative designs the definition of the chronologically distinct traits is not possible

General design canon

Background color

Background colors are in the order of frequency: white, black, red, dark red, buff, crème, natural. The background color is strongly related to the design. Black backgrounds generally have a colored design without outlining above. On red backgrounds sometimes a white outlining of black figures occurs.
In Early Nasca dark backgrounds, especially red, are more frequent than in later times, possibly being more frequent than white backgrounds. In Middle Nasca some designs are depicted only on a black background, but white backgrounds prevail. Red

backgrounds are present but to a minor extent. Buff backgrounds can be regarded as a diagnostic of Middle Nasca pottery, being extremely rare before and later.
In Late Nasca, black backgrounds are nearly absent, while red backgrounds are comparatively more frequent. White backgrounds are the most frequent backgrounds preserved in Late Nasca
The presence of red, dark red, black, white and crème backgrounds does not provide any temporal information, because all colors are present in at least two periods. The temporal difference is only in frequency. However, only in a very large sample the relative frequencies can be expected to be represented correctly, facilitating the possibility of dating the complete assemblage according to the relative frequency of background color. But, in a sample large enough for this kind of analysis other kinds of traits of design and shape will be present that allow a direct chronological placement. Therefore the background color is only of importance in direct relation to the design and will not be treated extra.

Rim decoration

The rim decoration is a trait preserved on most rim fragments and therefore presents a large comparative sample. On Nasca pottery the rim is often painted with a horizontal band sometimes combined with an additional horizontal line that contrasts with the design background. However, there is little chronological connotation in the rim decoration, apart of relative frequencies. Rim decoration has to be considered in direct relation to the background color (Table 26). But even with this detailed analysis it becomes obvious that the major background color/rim decoration combinations are present in at least two of the periods and have a reduced value for chronological analysis. There are some exceptions of rare combinations.
For Early Nasca a red wall with a dark red and white colored rim has been documented as exclusive occurrence (Plate 2: 4).
Middle Nasca is the period that features the greatest variety of background colors and rim decorations, and it is in this period where some diagnostic combinations could be defined. However, because of the small number of examples in these cases a later or earlier occurrence cannot be excluded completely. A black background with a blck rin that is separated by a white line is the most frequent one of the varieties restricted to Middle Nasca. The buff colored background is per se restricted to Middle Nasca; the rim decoration provides an additional detail that is not important to the chronological analysis.
For Late Nasca a category of thin black rim band in combination with a white wall is characteristic. There are few middle Nasca examples showing this feature, and the definition of a thin rim band is not exact. But the analysis revealed that the rim bands on many Late Nasca vessels are remarkably thin (e.g. Plate 52: 3, 7, 8, 9; compare to Plate 49: 1, 2, 6).

Table 26: Background color and rim decoration (based on database query on tbl_frg)
Frequent or important rim decorations are marked.

Color of exterior Background	Color/s of rim decoration	Number of fragments	Temporal occurrence		
			EN	MN	LN
white	dark red	12	EN	MN	
white	dark red/black	165	EN	MN	
white	red	13	EN	MN	(LN)
white	red/black	33	EN	MN	(LN)
white	black	658	EN	MN	LN
white	not differentiated	119	EN	MN	LN
white	white/black	1		MN	
white	yellow/black	1		MN	
white	buff	1		MN	
white	black thin	40			LN
black	red/white	36	EN	MN	
black	not differentiated	126	EN	MN	LN
black	dark red/white	179	EN	MN	(LN)
black	black/white	56	(EN)	MN	(LN)
black	white	5	(EN)	MN	(LN)
black	dark red	7		MN	
black	red	6		MN	
black	red/orange	1		MN	
black	yellow/red/white	1		MN	
red	dark red/white	27	EN		
red	red/white	7	EN	MN	
red	black/white	75	EN	MN	(LN)
red	not differentiated	151	EN	MN	LN
red	black	24	(EN)	MN	LN
red	black thin	8		(MN)	LN
dark red	black	9		MN	
dark red	black/white	54	EN	MN	(LN)
dark red	dark red/white	5	EN	MN	
dark red	not differentiated	23	EN	MN	
dark red	white	4	EN	MN	LN
dark red	red/white	3	EN	MN	LN
buff	black	14		MN	
buff	black/white	32		MN	
buff	dark red/black	1		MN	
buff	dark red/white	4		MN	
buff	not diffrentiated	8		MN	
buff	red/black	1		MN	
buff	red/white	2		MN	
buff	white	1		MN	
creme	black	9		MN	LN
creme	black/dark red	1		MN	
creme	black/white	4		MN	
creme	not differentiated	7		MN	LN

Lower border of the design area

A lower bordering of the design area is only present on fragments large enough. The design area comprises usually the complete wall of the vessel. On most fragments the design area is painted in a certain background color while the base of the vessel is left unpainted. The border between the painted and unpainted part can be designed in several ways. Bordering may be absent; where the background color ends the unslipped base begins. Otherwise, bordering occurs in form of colored bands, usually red, dark red, black or white. Combinations of two colors are also possible. Unlike the rim bands,

here the size of the band also is different. The bottom of the vessel may also be painted. Consequently, in the description of lower bordering as observed on fragmented pottery mixing of categories cannot be avoided: where the bordering band is not completely preserved its original size and the question of design below the band remain uncertain. The sample of completely preserved lower border bands is limited and this criterion has not been analyzed any further.

Arrangement in panels

On some vessels the design is arranged in two or more horizontal panels. While the exact number of panels is difficult to determine on fragments, the existence of various panels can often be assumed from a fragment. Several panels are common in Middle Nasca and Late Nasca. Middle Nasca panels are often narrow friezes alternating with purely geometric design. In Late Nasca narrow panels with a repeated design are often combined with broader panels with the depiction of a larger theme upon.
A typical Late Nasca design that is exclusively present in panels is the *Girl faces* theme.
On some Late Nasca vessels the design area is additionally vertically divided in panels of different background color.

Exterior/interior design

The design area is generally the exterior wall of the vessel. This is valid for all phases. The presence of interior design – combined with exterior design or with a monochrome exterior – is limited to a comparatively small number of fragments. Most of these vessels are known from Middle Nasca (Plate I.17: 4-5), but in Early Nasca the interior and exterior design exists (Plate 61: 1-4). Consequently this arrangement of the design on the vessel cannot be regarded as chronologically significant; the features of decoration and shape have to be taken into account.

Plain

A considerable number of fragments have a plain engobe decoration. This trait occurs in all periods and differentiation is best possible by vessel shape. On fragmented pottery there is also the possibility that the wall is monochrome and the design area is restricted to the interior bottom.

B.5.3 Classification of fabrics

Through macroscopic analysis of all fragments included in the sample two classes of fabrics could be differentiated: coarse ware and fine ware. No further definition of subcategories has been possible by macroscopic analysis. A sample of 27 fineware fragments has additionally been exposed to a mineralogical and compositional analysis. The analysis revealed that the sample was homogeneous in all aspects. The results of macroscopic, mineralogical and compositional analysis are shortly presented here.

B.5.3.1 Macroscopic analysis

A macroscopic analysis of color, texture, hardness and temper has been made for all fragments in the sample. The sample will be described in summary only. A detailed account of ware characteristics of each fragment is not necessary, because only few differences could be observed. The results of the macroscopic analysis allow only a simple coarse ware/fine ware distinction based on the temper criterion.

B.5.3.1.1 Color

The Nasca pottery from Palpa features color variations of red and gray. Colors of the cross section have been recorded for all fragments, but the corresponding Munsell code has not been determined systematically, because it soon became evident that the color differences are not the effect of differences in the paste. Only for a small choice of pottery the Munsell code has been documented. According to this, colors range between 2,5YR and 10YR. Color intensity is mostly from 5/2-5/6 and from 6/2-6/6 (Munsell 2000)

Color differences are gradual and even different colors occur on two fragments of the same vessel. There is no clear pattern observable. The definition of fabrics on the color criterion alone is problematic, because color is influenced by two different factors: clay composition and the firing conditions. Without further examinations both criteria remain unknown and it cannot be determined which of both factors is responsible for the variations of color observed (Shepard 1956: 105). Additionally the preservation conditions can lead to alterations of the original color that would disturb the pattern.

The observance of the color of 5000 fragments indicates that in combination with the overall characteristics as texture, hardness and temper, and considering that the sample is geographically homogeneous, it is more likely to suggest differences in the firing conditions than in clay composition. The mineralogical and compositional analysis of a small sample will serve as an additional argument.

Generally, in terms of firing conditions, a gray core of the pottery visible in the cross section indicates a not completely oxidized firing (Shepard 1956:106). Possibly, through the use of pre-firing polychrome engobe that would cover the greatest part of the surface, the firing atmosphere as a means for attaining a decorative color effect on the surface lost importance. In Initial Nasca and Early Nasca some examples occur that suggest an uneven firing process. But these are rare exceptions. In Middle Nasca and Late Nasca nearly all fragments have an even color, mostly well oxidized reddish, sometimes light gray. Very few fragments from Estaquería are of reduced fired black ware. This technical characteristic has been recorded as a decorative technique.

B.5.3.1.2 Texture

The surface texture is strongly related with preservation conditions, but also with the quality of the surface polish. A highly polished engobe surface seals the interior against salts from the surrounding soil that otherwise would destroy the surface. Fragments with a high quality polish and a fine engobe have an even and smooth texture. Fragments that have been exposed to erosion have a slightly chalky texture. Unslipped surfaces often remain unpolished and have a coarse surface. Most engobe painted pottery is slightly

smooth. Among the fragments with a chalky surface are many with a little complex iconography, sometimes in a hasty design. This aspect might serve as a criterion for describing the quality of the pottery. High quality fragments have a very fine engobe slip that is well polished and that seems invulnerable to surface alteration, while others suggest a hasty execution. A thin engobe and less effort in polishing expose the pottery to alteration. However, most fragments can be described as lying between these two extremes. The differences are gradual and no clear cut distinctions can be made.
The unslipped coarse ware pottery is identifiable through its coarse and unpolished surface. Few examples of this pottery are decorated with simple unpolished engobe painting.

B.5.3.1.3 Hardness

The usefulness of the criterion of relative hardness has to be assessed regarding the material to be tested (Shepard 1956: 113). Hardness has been recorded for most fragments with a simple scratch test, using a Mohs scale. The objective was to see if some interpretable patterning would occur. Within the sample of Nasca pottery from Palpa the recorded hardness according to Mohs is mostly 4-5. Few examples have a hardness of 3; this is in cases of surface alteration or low firing temperature. In rare instances a hardness of 6 has been recorded. This coincides with very fine, well polished and slip covered fragments. As the specimens aberrant in hardness coincide in all other aspects with the remainder fragments, it has been decided not to create a ware category upon this single criterion.

B.5.3.1.4 Temper

Temper or nonplastic material is deliberately added to the clay by potters to reduce drying shrinkage of the vessel. As the risk of shrinkage breaks increases with the size of the vessel, temper inclusions are primarily indicators of vessel size. But, shrinkage depends also on the characteristics of the clay and different clays might require different amounts of temper for preventing shrinkage breaks. However, among the Nasca pottery from Palpa small vessels nearly lack visible temper, while large vessel shapes are associated with visible temper. Additionally all other aspects of the fabric observed during the macroscopic analysis suggest homogeneous clay and therefore temper can be interpreted as directly related to vessel size.
Where the differences in temper are not only quantitative, but the sources and material of temper differ, temper might additionally be used as a criterion for defining fabrics. The mineralogical determination of temper particles can be done by petrographic analysis (Shepard 1956:54).
In the Nasca pottery from Palpa temper is homogeneous, consisting of quartzite (personal communication Michael Prange of the Ruhr Universität Bochum, 2008). Probably this is the local available river sand. A certain amount of mica is present in most fragments. It is not sure whether this constitutes a temper component or if it is a natural part of the clay.
Within the sample the temper inclusions are easily visible by eye. The use of a lens of 10x amplification did not reveal any more detail. Most of the engobe painted pottery does not feature a considerable amount of temper particles. In rare instances one or two

small grains of quartzite can be seen in the cross section. The mica is slightly more frequent but not to the extreme of being visible on all parts of a large fragment. The mica sometimes becomes visible on the surface as a result of smoothing and polishing.
Fragments of larger vessels that have a wall thickness of around 1cm or more present a clearly visible amount of quartzite. There is a tendency that size and amount of temper particles increases with the thickness of the fragment. The fact that there are no fragments of small vessels with more temper or fragments of large vessels with little temper suggest that the shrinkage properties of the clay of all fragments is the same and temper use is only related to vessel size.

B.5.3.1.5 Porosity

Porosity has been determined only by macroscopic analysis. The porosity of the pottery has been observed in the cross section. The sample presents a widely uniform porosity. On all examples from Palpa it is relatively low. Even in 10x amplification no marked porosity has been apparent. The degree of real porosity has to be measured scientifically. Due to the homogeneous appearance of the sample in this aspect a systematic analysis of porosity has not been conducted.

B.5.3.1.6 Results of macroscopic analysis

The macroscopic analysis does not permit the definition of different fabrics other than the differentiation of **coarse ware** and **fine ware** by the size and amount of temper particles.
This ware distinction for Nasca pottery is widely accepted and corresponds to the definition made in several previous studies (Proulx 1968; Blasco /Ramos 1980, Carmichael 1986, 1994b; Vaughn 2000).
Nasca coarse ware is characterized by having many and large temper particles of more than 1 mm grain diameter. This coincides with large vessel categories, mostly variations of the necked jar category (Plates II.1-11).
Fine-ware barely has a visible temper; grains of quartzite of up to 0.5 mm are exceptionally present, especially in Early Nasca.
There are no clear indications that suggest a relation between the color of the fragment and the clay used. The cross checking of clay color with other aspects like site provenience, decoration, shape and the other fabric properties produces no clear pattern sufficient to define a fabric. Color differences are gradual and seem to constitute variations caused by slight differences in the firing conditions, but with homogeneously composed clay. Hardness and texture of the sherd are closely related to the decoration technique. Engobe painted and polished fragments tent to have a smooth and scratch resistant surface, while fragments that lack an engobe painting or that have an unpolished surface a comparatively coarser and sometimes have a reduced hardness. The porosity is equally uniform and seemingly more related to firing and preservation than to clay differences.
There is a slight tendency towards Middle Nasca of a more regular burning atmosphere with the color of the paste often featuring a pinkish red. However this criterion has not been sufficient to define different wares. The temporal signification is limited by the fact that this is a mere tendency.

Reduced black pottery can be considered a ware of its own, yet it is more than a mere casual variety. But, reduced firing can also be used as a decorative technique, and as such it ad been treated here. This is supported by the componential analysis (see below). In the small sample there were two reduced fired Initial Nasca sherds from Estaquería. The composition of the clay is the same as in the case of the other fragments. The reduced pottery from the Initial Nasca period will not be classed as a ware on its own.

B.5.3.2 Mineralogical and compositional analysis

With the aim to detect possible differences in the paste that are not detectable by eye, a small but variable sample of 27 fragments have been selected for a petrographic, mineralogical and compositional analysis at the Ruhr-Universität Bochum (Table 27).

Table 27: Samples for x-ray diffraction and ICP-OES analysis at the Ruhr-Universtät Bochum

Period	Site, excavation unit, year	Feature nr
Initial Nasca	Estaquería, PAP 69 test pit 4 2006	3592-2 3592-3 3592-7 3592-8 3592-17 xxxx-21 (sherd arrived in fragmentary stage)
Early Nasca	Los Molinos, PAP 93 Sector A, unit 1 1998	529-2 530-5 530-11 535-2 538-2
Middle Nasca	La Muña, PAP 79 Sector B, unit 5 1998	202-10 202-20 202-35 202-43 217-2 217-4
Late Nasca	Parasmarca, Pap 196 Sector A, unit 1 2006	3601-8 3601-11 3601-33 3669-205 36xx-12
Loro (Middle Horizon)	Parasmarca, PAP 196 Sector A, unit 9 2006	366940 3669-42 3669-111 3669-146 3669-5x

Total number of samples analyzed at the Ruhr Universität Bochum	27 fragments

The analyses included 1) a petrographic analysis of the **thin section**, 2) a mineralogical analysis by **X-ray diffraction**, and 3) a compositional analysis of clay by **ICP-OES**

All fragments chosen for these analyses are decorated fine ware, according to the above described categories. Where present, the engobe decoration has been scratched of in order to not disturb the analysis. The analysis followed the objective of determining clay differences within the fine ware category not detectable by macroscopic analysis. The temporal scope for detection of differences was within one period, and especially among different periods. Variations could be expected yet the sample fragments had been taken from different contexts of different epochs: Initial Nasca, Early Nasca, Middle Nasca, Late Nasca, and Loro (Early Middle Horizon), all embarking a period of 600-700 years.

B.5.3.2.1 Results

The result of all three analyses made is simple: none of the analyses revealed marked differences in the clay that would allow the differentiation of fabrics (personal communication Michael Prange, Ruhr Universität Bochum, 2008).

By **X-ray diffraction** the mineral composition of the clay can be determined. The clays of the fragments submitted for analysis all consist of Quartzite, Cristobalite, Anorthoclase, Albite, Muscovite, and Riebeckite (Appendix 4, graph 1-27) indicate.
Additionally, the firing temperature can be estimated. The chemical elements are bound in a crystalline structure that is subjected to changes during the heating process (Noll 1991: 14, 31). The mineral phases observed by X-ray diffraction indicate a firing temperature of more than 850°C. Interestingly, this result is valid for fragments from all phases and even for the reduced fired fragments from Estaquería.

By **ICP OES** the composition of the clay has been analyzed. Clay is always composed by a large amount of chemical elements. Most elements are existent only in a very limited amount. The principal components are in varying relative frequency: SiO2, Al3O2, and Fe2O3.

The ICP-OES demonstrates that the clay source used for the elaboration of fine ware pottery has been homogeneous for the entire sample. The relative frequencies of 27 analyzed elements and trace elements can be seen in Appendix 4, Table ICP. The average value is marked green. The samples have been ordered by chronological period.

The main component of the clay is SiO2, with an average percentage of 57.5% of the elements measured in the clay. Variations are no more than 3% from this average. The second most frequent element in the clays from Palpa is Al3O2, averaging 19.7%, with variations of no more than 2.3%. The third most frequent element is Fe2O3, averaging 7.2%, with a maximum variation of 2.6%. Further elements with a frequency percentage

of more than 1% detected in the samples from Palpa are CaO (4.63%), K2O (3.13%), MgO (2.63%), and Na2O (2.53%). In none of these components a significant variation has been detected.
The variations that have been measured are insignificant. The quantity variation recorded among the analyzed specimens are all so small that they can be best interpreted as normal variations within a homogeneous clay source . None of the variation would be sufficient to justify the definition of a different type of clay. All differences are within a margin normal to a homogeneous sample of clay. Even on the diachronic level, comparing the samples from different epochs, no marked differences can be noted.

As a conclusion it can be stated that all analyzed fragments have been manufactured from clay with very similar componential characteristics. This is no positive indicator for the use of the same source of clay during the centuries. The result suggests that composition of clay is very homogeneous throughout the Palpa area. For further studies it would be interesting to compare these results to componential analyses from other valleys.
It would be interesting to continue research on this topic on the trace element level, by submitting the sample to an INA-analysis (cf. Vaughn/Neff 2000).

C Discussion

In Section B a representative sample of Nasca pottery from Palpa has been presented.
The observation of distribution of shapes and designs among the sites allowed the definition and stylistic classification of four major settlement periods: Initial Nasca, Early Nasca, Middle Nasca, and Late Nasca.

In this section this sequence will be discussed in some more detail:
First the evidences from vertical stratigraphy from Palpa are analyzed. The objective is the identification of stylistic variations restricted to parts of the stratigraphy that would allow a further temporal subdivision of the settlement periods.
After, the numerical chronology as provided by a number of analyzed ^{14}C samples from Palpa is treated. The numerical ages of ^{14}C samples from the stratigraphies included in this study are discussed in the light of the classification and analysis of vertical stratigraphy (B.5 and C.1).
Finally, the results from Palpa are compared to the Dawson sequence. The comparison includes two related aspects:
1) By comparison of the Palpa sequence, as defined in sections B.2, B.3 and C1, to Dawson phases Nasca 1-8 the parallels and differences of both sequences are defined. This refers especially to the record of the Dawson phases in Palpa and the underrepresentation of some phases.
2) In a wider perspective the regional distribution of specific Palpa design traits and of the Dawson phases among all valleys of the Nasca region (from Ica to Acarí) is shortly discussed.
As a conclusion, the settlement history of the Palpa area can be reconstructed and compared to the general development of the Nasca pottery style.

C.1. Vertical stratigraphy

In this chapter the superposition of design and shape traits in the vertical stratigraphy is discussed with the aim of determining the possibility of further chronological subdivision. The discussion presented here is widely limited to design traits; shapes will be regarded, but there are few temporally significant shape distinctions within the defined periods. Minute varieties in the vessel proportion may provide a good means for chronological subdivision, but such fine distinctions are applicable only to complete vessels (Proulx 1968; Roark 1965; Wegner 1975).
During the classification of designs (B.5.2) the decorative themes and their variations have been presented. For many themes and design traits a characteristic temporal distribution among the four major settlement periods could be observed (Plates 1-136; Table 28). This pattern defines the four major settlement periods stylistically. For some themes further variations within one period have been observed. These will be checked in this chapter according to their distribution within the vertical stratigraphy with the objective of identifying exclusively early or late traits that can serve as temporal markers for a subdivision of the periods. A second indication for finer temporal subdivision within one period is through the observation of design traits that occur in

adjacent phases without major variation. Supposed there is continuity in the use of the traits, they would possibly be found towards the corresponding extremes of the stratigraphies, for example as late Early Nasca trait and early Middle Nasca trait.
The analysis of vertical stratigraphy is being conducted with a choice of comparable design traits (Table 28, see B.4.2.2). An analysis of all possible traits including many unique traits and traits that change little over time would obscure the pattern. Here, the general possibility of chronological subdivision will be checked by discussing the most frequent and significant design traits. If there are indications for a subdivision, this should be worked out in detail in further studies, with a broader database. The traits listed in Table 28 will be observed throughout the whole stratigraphic analysis. Occasionally other less frequent traits will be additionally cited.

Table 28: Traits for analysis of vertical stratigraphy

Theme	variations
Fish	early straight (Plate 73) banded (Plate 75) late (Plate 77)
Ají	vertical colored bands (82: 7-10)
AMB	head horizontal (Plates 7: 1; 13: 5-6) white lips (Plates 1; 4; 10: 1) colored lips (Plate 10) late, with body (Plate 13: 1, 4)
Ball	frieze (Plates 108; 109)
Beans	floating color (Plates 84; 85) small, red dots (Plate 88: 1-4)
Birds	wing segmented, crossed line (Plates 63, 68; 69) wing segmented, lines uncrossed (Plate 65) solid colored (Plate 71: 3, 5-7)
Bizarre Innovations	present[2] (Plate 13: 7-9)
Black dots, background filling	present (Plate 136)
Checkered	present (Plates 117, 118)
Concentric half circles	present (Plate 125: 1-4)
Corn	floating color (Plate 89) solid colored (Plates 90-91) small (Plate 90: 5-13)
Crescents	solid colored, frieze on low sided bowl (Plate 126: 8-11)
Duck	present (Plate 63)
Elongated triangles	present (Plate 132)
Forehead ornament	hooks separated (Plates 1-2) flat (Plates 7, 9)
Girl faces	present (Plates 37-39) angular (Plate 38: 8-9)
Half circles	attached to inner rim (Plate 128: 8, 9)
Human	colored (Plate 31)

[2] There is no subdivision of this category; therefore the criterion for analysis is its presence as a theme.

	black (Plate 32)
Lúcuma	present (Plates 94. 6-10; 95)
Nested rectangles	present (Plate 130)
Proliferation	present (Plate 51: 1-3)
Serpentine creature	present with mouth mask (Plate 19)
Serpentine creature	present without mouth mask (Plate 20)
Slings	present (Plate 54)
Small rectangles	present (Plate 136)
Star with eye	present (Plate 15)
Step	main design (Plate 114) panels, colored (Plate 115) panels, black (Plate 116)
Streamer	scalloped spikes (Plates 23; 24: 1; 21: 1) triangular spikes (Plates 21; 25) spikes cleft point (Plate 26)
Toe/finger lines	not crossing into colored area (Plate 3: 3; 4: 1)
Trophy heads	trapezoid head (Plate 49) frontal open eyes (Plates 40; 41; 43) black hair lobe (Plate 38) frontal closed eyes (Plates 44-46) between spikes (Plates 26, 27; 47: 1-2) cursive (Plate 52) headdress (Plate 51) elongated eyes (Plate 51: 7)
Volute rays	present (Plate 14)
Wavy lines on rim	present (Plate 100)

As explained above (B.4.2.2), the way of comparing the stratigraphic layers with the associated materials differs slightly from context to context. Ideally, each stratigraphic context includes a sufficient number of comparable traits. However, in some instances there is little associated material combined with a complex stratigraphy of partially linked architectural units. In these cases layers have been lumped in order to compare earlier and later moments of the stratigraphy. Each context requires a specific analytical approach to extract the maximum information of the data.

The discussion of vertical stratigraphy is structured by major period and within these, by excavation unit. A description of the stratigraphies is included in Appendix 1. The stratigraphic relations are graphically presented in a Harris Matrix (Appendix 2). The stratigraphic comparison of the traits selected for analysis is presented in cross tables (Appendix 3). Not all of the traits and individual fragments discussed here are presented in the illustrations accompanying in this study (Plates 1-136). For the remainder the number of fragment is cited and the fragments can be seen in the database (Appendix 5, DVD).

C.1.1 Initial Nasca

PAP 73 - Estaquería

Sector D, Unit 1 (Appendix 2, Harris 1; Appendix 3, Cross Table 1)

This is the only Initial Nasca context included in this study. Through stratigraphic analysis the possibility of stylistic subdivision of the Initial Nasca period has to be assessed.

Initial Nasca designs are geometric and have no characteristics comparable to Early Nasca or the later periods. The differences are technical, contrasting with the decorative technique of polychrome engobe painted Nasca pottery. Consequently, the design traits selected for this analysis (Table 28) cannot be observed on Initial Nasca pottery. For the analysis of this Initial Nasca stratigraphy a number of ten decorative techniques and design traits has been defined that can be observed on the material from this stratigraphic cut. It can be expected that further investigation will reveal more decorative traits for Initial Nasca pottery. The traits presented here are those observable for this limited sample from Palpa.

The traits and their stratigraphic context have been tabled in Cross Table 1 in order to identify design traits with possible chronological relevance. However, the reduced number of fragments per layer is a severe limiting factor. For reliable results the ten design traits to be analyzed would require an estimated minimum of about 50 fragments per layer; this contrasts with the maximum of 16 fragments documented here.

Layer 100 is the surface layer with mixed materials reflecting various moments of settlement activity at the site. Yet, the polychrome vessel (Plate I.18: 1) found on the surface is interesting because it constitutes the link to the earliest pottery at Los Molinos (C.1.2). It defines a transitory period that in Palpa has not been documented in stratigraphic context up to date.

A black line on the rim is additionally known from layer A of this excavation. A late placement within the Initial Nasca sequence fits with the frequency of black rims in Early Nasca.

Several decorative techniques are present throughout the stratigraphy and can be regarded as characteristic for Initial Nasca. These are:

- a polished surface without engobe covering (Plate I.11: 3; I.32: 1)
- black surface through reduced firing (Plate I.4: 5; I.32: 2)
- incision (106a-4; 100-17; 3488-1)
- a fugitive red engobe on the exterior and/or interior wall (Plate I.11: 1)

Other traits are limited to the lower levels of this stratigraphy: These include:

- red engobe painting on the rim (I.37: 5)
- negative decoration (I.4: 6)
- geometric engobe painted pattern (vertical lines) (Plate I.4: 19
- a brown on crème design of vertical lines (Plate I.37: 8)

Possibly there is a chronological significance in this distribution. However, further investigation on the Initial Nasca period is required to exclude sample bias.

The distribution of shape categories in the stratigraphy does not provide additional hints regarding a subdivision of the sample. There are only 43 fragments diagnostic to shape included in the sample. The overall characteristics of Initial Nasca pottery shapes have been described above, contrasting them with later shapes. One shape category is the convex flaring bowl. Within the stratigraphy at Estaquería the upper layers lack this shape. The latest record of a convex flaring bowl is in layer E (106). Below this there are several examples. On the contrary, convex insloping vessels can be observed throughout the whole stratigraphy and even the wall inclination provides no clear chronological pattern. Concave or straight walled vessels are rare in Initial Nasca, but are present at several levels of the stratigraphy. Only very few closed vessels have been documented at Estaquería so that a sequential ordering of these shapes is not possible. A subdivision of this small sample is not possible.

Concluding, it can be stated that the small sample allows only a tentative identification of some possibly early and late design traits. If this pattern should be confirmed by future investigations it would allow a differentiation of two Initial Nasca phases. However, up to the moment such a subdivision cannot be sustained. A crucial question remains the absolute time span embarked by this stratigraphy (C.2). There is a possibility that the stratigraphy covers only a part of the Initial Nasca period and further excavations could reveal more design traits with chronological significance.

C.1.2 Early Nasca

Los Molinos A

Stratigraphic information from three excavation units in Sector A of Los Molinos have been included in this analysis: Units 1-3. The objective of the stratigraphic analysis is to check the possibility of chronological subdivision of Early Nasca period. A subdivision in Nasca 3 A-D has been proposed by Proulx (1968). The applicability of this phase distinction has to be evaluated. A special attention has to be paid to the transition to the neighboured periods Initial Nasca and Middle Nasca.

Unit 1 (Appendix 2, Harris 5; Appendix 3, Cross table 2)

The principal reason why this unit has been included into this study is because here is best evidence for the Middle Nasca occupation at Los Molinos. In an architectural unit denominated as Plaza 1 the upper layers B-C (328, 329, and 333) present a considerable amount of diagnostic Middle Nasca pottery. Most of this pottery is associated to a constructive filling (329, 333) placed above a clean Early Nasca related floor. Obviously this filling represents a later moment of limited building activity at the site. The Middle Nasca traits observed are:

- Dot phase trophy heads between the spikes of a streamer
- Colored steps arranged as a panel of a multi-panel design
- Small corn
- Large colored corn design
- Frieze of solid colored balls
- Colored representation of a human

One unique piece that has not been defined as comparative trait can be included here: it features several rows of rodents and even the shape is very diagnostic: it is a high shape with concave flaring walls that become convex in the upper part (Plate 1.10: 19). In comparison with the stratigraphies from La Muña analyzed here it can be stated that this Middle Nasca occupation of Los Molinos corresponds to some advanced moment in the Middle Nasca period; it is not directly following to Early Nasca.
For a subdivision of Early Nasca the stratigraphies from unit 1 do not present a sufficient amount of diagnostic pottery. The stratigraphies from different architectural units are up to 8 layers deep (B-I) but due to the scarcity of material it can only be stated that layers D-I are Early Nasca. There is not enough evidence to support a subdivision of Early Nasca.

Concluding, unit 1 presents a superposition of Middle Nasca over an undefined Early Nasca occupation comprising several superposed levels associated to the principal building activity at the site.

Unit 2 (Appendix 2, Harris 6, Appendix 3, Cross table 3)
The stratigraphy from Unit 2 is the one with the earliest evidences of Early Nasca documented in Palpa. The stratigraphic record includes two adjacent deep stratigraphies. The cuts are from a central Corridor and from Room 1. The stratigraphic distribution of analyzed traits can be compared (Cross table 3). The traits have been ordered according to their occurrence in Room 1; after, the pattern from the corridor has been added below for comparison.
Some traits could be defined as particularly early:

- Crescent design (Plate 126: 9-11)
- Toe/finger lines not crossing the colored area (514-2)
- Turned U design (Plate 126: 6-7)

These traits are all present in layer J (514) of room 1, while they are not present in the lowest layer of the corridor. In room 1 there are more early traits observable that have not been tabled for the comparative analysis. There is especially the shape category of low walled small bowls with a marked base angle and with slightly convex or straight walls that may be vertical, slightly flaring or slightly insloping (Plates I.15; I.32: 4-9; I.38: 1-2). This shape is associated with the crescent design, but also with a frieze of other simple geometric designs. The shared characteristics are: the absence of outlining, the color scheme with only black and dark red designs on white, and a black rim. Although stratigraphic contexts with comparative pieces could not be included in the study sample, the early character of this pottery is undebated. These bowls have been identified as a particular diagnostic of Nasca 2 pottery (Strong 1957, Silverman 1977). The stratigraphic anteriority to Early Nasca has been proved in stratigraphic excavations (Strong 1957). The shape has the closest similarity to some Initial Nasca bowls (Plates I.30: 1-3; I.36; I.37).
Other unique design traits might be also regarded as particularly early, but they lack further stratigraphic proof. These are:

- a garza design with partially outlined beak (Plate 64: 4)

- spinning circles (Plate 125: 5)

It is obvious that these traits disappear soon in the sequence and their presence marks the earliest moment of Early Nasca so far documented in Palpa. Other shape and design traits observed in the same layer are not so diagnostic; they occur throughout the sequence. For the presence of later traits, the context cannot be interpreted as transitory.
All in all, there still seems to be a documentation gap between Early Nasca and Initial Nasca. It can be stated here that the transitory material can be expected to be similar to the cited examples from Layer J (514) at Los Molinos sector A, Unit 2.

The pattern present in the upper layers of this unit is not very specific; maybe this is due to sample size. Some traits that appear later in the sequence from room 1 are early present in the corridor, while some early traits from room 1 have a later appearance in the corridor (Cross table 3).
In the uppermost layers (B and C) in association with the latest floor of use some Middle Nasca pottery has been found. The specific traits have not been included in the comparative graph, but they are equally diagnostic Middle Nasca traits. Among these are:

- rhomboid eyes of AMB (Plate 9: 1)
- vase shape (with some Early Nasca occurrences) associated with horizontal bands and broad wavy lines (Plate 98: 6)
- large sprouting Lúcuma, touching rim decoration (Plate 95: 4)
- frieze of darts attached to vertical bands (Plate 55: 3)

Concluding, the stratigraphy at Unit 2 presents 1) an early moment characterized by the last residues of the Initial Nasca – Early Nasca transition; 2) a deep stratigraphy with a large variety of diagnostic Early Nasca traits that cannot be subdivided at presence; and 3) some evidences of a later Middle Nasca use of the structure.

Unit 3 (Appendix 2, Harris 7, Appendix 3, Cross table 4)
The stratigraphic record from Unit 3 comprises three architectural units, UA 1, UA 2, and UA 3. The stratigraphies are not linked. According to the methodology described above (B.4.2.2; C.1), the small sample will be compared in a simplified scheme and interesting patterns will be discussed in their original stratigraphic context in a second step.

In the comparative view of all stratigraphic layers from this unit (Cross table 4) two traits could be identified as earliest elements: a streamer with scalloped spikes, and concentric half circles. All come from layer 299 from UA 1; this constructive filling has been recorded as stratigraphically equal with layer I (529) from UA 4. It is superposed to layer 295, but is the earliest context in this unit that presents some traits that are exclusively early within this stratigraphy:
The scalloped spikes have been observed early in several units. But, this shape of spikes is popular until the beginning of Middle Nasca (Plate 23). The concentric half circles resemble a spinning circle design from 514 in Unit 2 and for this association might be regarded as an early trait. However, the stratigraphically latest occurrence of this trait is in layer C at Unit 1 (564) so that this trait alone does not justify an interpretation as

particularly early. The existing variations within this theme (Plate 125) present no clear pattern in this small sample.
As compared with Layer J (514) from unit 2 the earliest evidences from Unit 3 do not seem to be particularly early.

Some traits have been identified as occurring later in the sequence: these are: *AMB with white lips*, *birds with uncrossed segmentation lines, floating color beans, hooks on forehead ornament, and nested rectangles*. But this pattern is not representative when compared to the evidences of the other units. In other contexts the same traits have been identified as early.
In UA 4 layer A presents some good diagnostics of the later Middle Nasca use of the site: a vase decorated with two friezes of stars in alternating colors (I.42: 3). In the other architectural units, layer A (530, 532, 262) is associated with Early Nasca pottery. This indicates that the later use of the structures was limited, not extending over the complete site.

Concluding, there is no evidence in Unit 3 for subdividing the Early Nasca period.
There are no specific early traits definable for this unit. Therefore the lower levels are best interpreted as representing the peak of the Early Nasca settlement at Los Molinos. The evidence of Middle Nasca is clear but much reduced as compared with Units 1 and 2, suggesting a reduced reuse of the structures in Middle Nasca.

Los Molinos B (Appendix 2, Harris 8, Appendix 3, Cross table 5)
The interpretation of the stratigraphy from los Molinos B is difficult because there is not sufficient diagnostic material in all layers. To get some better results, several layers will be grouped, to define an early and a late moment within the stratigraphy. The largest sample of diagnostic pottery comes from layer G (824) of the corridor, one of the earliest floors within the whole unit. Due to its central position on the corridor this layer is directly stratigraphically linked with three stratigraphic sequences: UA 3/Access 1 (423-431, 814, 817), UA 1/Corridor (809, 812, 818, 819, 822), and UA 2/Low Platform (833, 838) (see Harris 8).

Due to the abundance of material in layer G (824) contrasting with the little material documented in many other layers the pattern from this stratigraphy is not so clear. A chronological subdivision of Early Nasca is not supported by the evidences from this stratigraphy. Most of the design traits present in layer G (824), which is thought to represent one of the earliest moments of use of this platform, occur throughout the Early Nasca sequence. Additionally, a large amount of contemporaneous variation of themes has been documented in this layer. This proves that minute differences in the iconography cannot be interpreted in a strict sequential manner. There is much synchronous variation of a theme as for example in case of the AMB theme (Plates 1, 2). Given this situation and the relative scarcity of comparable material in the upper layers it is not possible to define concretely this early moment of use of the structure.

Only one of the analyzed traits could be identified as possibly predominantly early according to the distribution presented in this stratigraphy. This is the trait *toe/finger lines not crossing over into the colored area* (Plate 3.3). It has been identified in various

examples from layers F-H (817, 822, 824, and 834) and links these layers stylistically with the beginning of the stratigraphy in Sector A (514) where it also occurs. Only two examples of this trait fall out of the pattern: one is surface layer related (802sn) the other comes from layer C (429-4), but this is not necessarily a foot or paw and a classification error cannot be excluded. A last example from La Muña (710-42) falls out of the pattern, because it is a colored on black representation that differs in several ways. From the upper layers at Los Molinos there is no more example of this trait so that it can be tentatively identified as early.
Evidences for identifying a later moment of Early Nasca according to the later introduction of new traits are very weak. Two traits may possibly be identified as later phenomenon, starting at some advanced moment of Early Nasca: straight fish, and floating color corn. Comparing this with the evidences from Sector A the straight fish can be tentatively identified as a somewhat later phenomenon, lacking in the lowest layers of all units. However, regarding the limited sample size the absence of a trait can not be regarded as a hard criterion. Maybe the presence of few straight fish in Middle Nasca (Plate 76) supports the impression.
The corn theme –solid colored or floating color - is indeed a rare theme in Early Nasca and is generally Middle Nasca related. The presence of few specimens in clear Early Nasca contexts suggests that the origins of this theme have to be searched for in Early Nasca. This is a good example for the gradual character of change: many design themes have occasional occurrence considerably before they become characteristic for one period. This always has to be remembered when citing isolated design traits for phasing.
In layers A and B of this unit some Middle Nasca materials fall out of the pattern. These include more examples of corn, a ball frieze and an elaborated spotted cat, a unique theme that have not been tabled in the comparative analysis (Plates 28: 4-5; 92: 1-2; 108: 1-6, 9).

Concluding, the evidences from sector B indicate that the occupation of this sector has been widely contemporaneous to that at sector A. However, the beginning of building activities in sector A can be traced further back to the beginning of the Early Nasca period, while sector B starts with a larger variety of Early Nasca traits and without remains from an earlier transitory phase. As in sector A, the sample size does not permit a subdivision of Early Nasca. It is to question if this situation would considerably change with a larger database. The end of the sequence at Sector B is equally characterized by some limited Middle Nasca evidences.

C.1.3 Middle Nasca

The Middle Nasca pottery is represented by contexts from two adjacent sites: La Muña (PAP 79) and PAP 78. The findings from four stratigraphies have been documented for this study. The traits chosen for this analysis will be observed in their stratigraphic distribution and some other traits of interest to the discussion will be presented.

PAP 78
TP2 (Appendix 2, Harris 2, Appendix 3, Cross table 6)
This stratigraphy shows a clear superposition of Middle Nasca above Early Nasca, and Early Nasca above Late Paracas. The Late Paracas context at layer G (1344) is

attributable to Phase Ocucaje 8 (cf. Menzel/Rowe/Dawson 1964; Wetter 2006). Decorations include incised circles and incised lines, reduced black ware and monochrome red engobe. Most characteristic among the shapes is a twisted handle of an unknown closed vessel.
Layer F (1343) is clearly Early Nasca associated. Included in the comparative analysis (Cross table 6) is a bean design (Plate 84: 10). Other diagnostic traits are triangles (Plate 134. 2), ají (Plate 81. 5), and a ball frieze on a low walled bowl (Plate 109: 2). The lower border of the design area is unmarked. The shapes are bowl shapes; walls are straight or slightly convex and flaring, but not more than 20° (Plates I.2; I.12). The shapes are Early Nasca related and in combination with the design serve as temporal markers. However, it is especially the combination of many fragments with Early Nasca traits that permits this classification. For the size of the design, the relative height of some vessel walls, or the presence of a double vertical division line associated with the ball frieze, similar traits could also be found in Middle Nasca contexts. As will be seen, some of the traits will continue in higher layers of this sequence. Apparently this context represents a very Late Early Nasca context. For its presence at a Middle Nasca related site, this context can also be interpreted as an early Middle Nasca context, representing the transition from Early to Middle Nasca.

More Early Nasca traits have been documented in layer F (1368), like a sling (Plate 54: 13), a frontal trophy head (Plate 43: 1), or a Killer whale design (Plate 18: 3). Other traits seem more Middle Nasca related, like opposed triangles filled with red spots and with a curved vertical division line (Plate 135: 1). The stratigraphic position and the repeated presence of Early Nasca traits suggest that this context represents the transition from Early to Middle Nasca in Palpa.

Layer E (1367) seems already Middle Nasca related. Fragment 1367-2 (Plate 85: 2) features a bean, the design touches the rim decoration and the tip is not solid colored as in the previous example and as observed at Los Molinos. Another fragment (1367-4) preserves a cleft pointed spike, in this case apparently the nose of a trophy head. There are only very few examples of cleft points in Early Nasca, for example on Serpentine creature depictions. The observed shapes in this layer are bowl shapes. Walls are majorly straight and flaring with an inclination of about 25°.
Layer E (1365) is also predominantly Middle Nasca as suggested by the traits *spiked band with cleft point and trophy head between spikes* (Plate 44: 7), a colored on black AMB (1365-3), and triangles with red spots (Plate 135: 4). Vase shapes occur (I.42: 6). However, again some Early Nasca design is present (bean, Plate 84: 9), very similar to the design from layer F (1343), although in this specific case the shape with a flaring wall of 25° inclination fits the Middle Nasca context. Other bowls have even a stronger inclination up to 40°. In layer D (1364) the trophy head (Plate 43: 4) is clear Middle Nasca, as is the triangle design with wavy lines on the rim (Plate 133: 11). An interior incised bowl is mixed in this layer. Layer C (1363) includes several diagnostic Middle Nasca designs: trophy head (1363-1) and corn, (Plate 92: 4). Other traits lack comparison but also seem Middle Nasca related for example a spiral touching the rim (Plate 135: 11).

Layer B (1362) contains little diagnostic material, only some coarse ware and a residue from Initial Nasca times with incised circles. Layer A (1361) is not representative as it presents the looting debris from a funeral structure.
Concluding, this stratigraphy shows clearly the superposition of Middle Nasca, Early Nasca, and Late Paracas. A subdivision of Middle Nasca is not possible within this stratigraphy. But, it seems that the contexts from this excavation together represent an early moment of Middle Nasca that can be contrasted with later Middle Nasca evidences. It can be seen, that the change from Early Nasca is not abrupt, as obvious also in the continuity of most iconographic themes (see B.5.2 and Plates).

TP3 (Appendix 2, Harris 2, Appendix 3, Cross table 7)
The lowest layer of the stratigraphy is Layer G, a floor (1355) with its constructive filling (1356). Here many traits are seemingly Early Nasca related as the frontal trophy head with open eyes (1356-21), the steps as main design (1356-6), or the rounded profile trophy heads with open eyes (1356-7).
However, the specific association with Middle Nasca traits is such, that the whole context would be interpreted as Middle Nasca comparable to layer E (1367) at TP 2. The execution of some designs can be interpreted as characteristic of Middle Nasca style, like the size of triangles and their hasty design (Plate 133: 7) and parallel zig-zag lines (Plate 97: 12). Some traits occur that have a sporadic appearance in Early Nasca but become more frequent in Middle Nasca: a red band as lower border (1356-15); interior of the bowl only polished, without engobe (1356-1; 1356-2, 1356-6); a red band on the interior rim (1356-3; 1356-5), and a broad black band as lower border of the design area (1356-12). Still, few sherds show Early Nasca characteristics as the red engobe covering of the interior wall (1356-7, 1356-4). The context is a constructive filling and some mixing with earlier materials is likely to occur. Similar to the situation in TP 2, the inventory of this layer represents the gradual change from Early to Middle Nasca.

From layer 1355 on up to 1349 all layers contain a small quantity of diagnostic Middle Nasca pottery. However, the design appears conservative (Plates 20: 1; 48: 4; 84: 8) in the arrangement of the designs. Similar to the Early Nasca canon the designs are clearly defined. They cover a larger part of the design area than the Early Nasca designs and there are some characteristics as the vertical orientation of ají (Plate 82: 10) or the closed eyes of the trophy head (Plate 44: 3). Fragment 1348-2 with a fox representation seems slightly more progressive (Plate 57: 6), as is a vase shape (Plate I.41: 2).

Concluding, this stratigraphy also presents the transition from Early Nasca to Middle Nasca. The time span covered by this sequence is unknown, but all the material seems to be early Middle Nasca, as will be seen in the analysis of the stratigraphies from La Muña. This is paralleled by the early components from TP 2 at a distance of only 20 meters (see above). Further stylistic comparison to other Middle Nasca contexts will reveal more details regarding the definition of early Middle Nasca components.

PAP 79 La Muña

Sector A, Unit 8 (Harris 4, cross tables 8-9)

This stratigraphy is particularly interesting to the study for two reasons: it is a deep stratigraphy presenting a superposition of nine layers (floors and constructive fillings), and many of these layers have sufficient diagnostic material. There are two parallel stratigraphies in architectural unit 1 and architectural unit 3. Due to the quality of this stratigraphy, it will be discussed in some more detail, first layer by layer and then with reference to the comparative graph (Cross tables 8-9).

Architectural Unit 1

The lowest level in this architectural unit is layer H (755). The material is Middle Nasca. The trophy heads are realistic, with closed eyes (755-2, 5, 8, 12; Plate 48: 7), similar to those at PAP 78 (see above). Vase shapes occur (755-2, 3, 8, 9; Plates I.40: 5; I.45: 3, 5; I.46: 2); vases often have the interior rim decorated with a red band (755-2, 755-8, 755-9). Bowls have a polished but undecorated interior (755-4, 755-5, 755-7). Human figures occur with colored body, detailed hands and face (Plate 31: 3). The rim may be decorated with wavy lines (Plate 133: 9).

Some designs suggest an early moment of Middle Nasca because the themes and their execution still resemble the Early Nasca style, for example colored balls (Plate 108: 8); Lúcuma (Plate 95: 5); triangles (Plate 134. 8); concentric rectangles (Plate 130: 6); sling (Plate 54: 11), concentric half circles (Plate 125: 7); streamer with segmented snake band (Plate 26: 3).

Layer G is a filling placed to level the natural surface. Both features 746 and 752 constitute this filling and can be considered contemporaneous. Hence there is a large sample of nearly 230 fragments representing this early moment of construction at the site. Trophy heads continue a frequent theme, changes are gradual (Plates 43: 5; 44: 1, 4, 5, 7). Other themes are lúcuma (Plates 94. 10; 95: 8); wavy lines on the rim (Plates 98: 2; 133: 8), vertical ají (Plate 82: 8), serpentine creature (752-91), and a fruit or crop with floating color filling (746A-135).

A segmented snake band occurs in an abstracted variation without dot faces (Plate 23: 3), but also with dot face (752-69). Other designs that can be interpreted as early Middle Nasca themes are the sling design (Plate 54: 10), a frieze of solid colored triangles below the rim (Plate 134: 12), washed lines (Plate 102: 2, 5, 6), vertical lizards (752-16), and concentric rectangles (Plate 130: 7).

A more progressive design is a band with attached hooks (752-2). While sample size and functional context may be responsible for the concrete composition of the sample, the recurring presence of themes with a clear relation to Early Nasca style and the comparison with the early context at PAP 78 suggest that these lower levels of the stratigraphy represent some early moment of Middle Nasca. However, it is no transitory context. There is no Early Nasca pottery present; just many traits are stylistically comparable to the Early Nasca monumental style.

This hypothesis could be supported by changes in the inventory of the upper levels.

Above 746/752 the stratigraphy continues in two separated architectural units.

In unit 1 the following layers include a large amount of material, all Middle Nasca. Comparable themes are the lúcuma (Plate 94: 11), wavy line on the rim (743-5, 14; 740-8, 14; Plate 100: 6), corn (743-16; 740-16; Plate 89: 3); the serpent creature with a snake band (740-12); trophy heads (740-2, 5, 6, 19, 57); a red band as lower border of the design area (740-55, 67), or the design crossing the lower border (740-54). Rare

examples of mythical themes new in Middle Nasca are the Spotted Cat (Plate 28: 2) and the Harpy (Plate 29: 1).
In layer 733 a new way of depicting birds occurs with a parrot design (Plate 71-3) that contrasts with earlier bird depictions with a segmented body and wing in changing colors (Plate 67: 3). Also the trophy heads change (Plate 50: 4; 733-5); small vertical ají appear (Plate 83: 4) and the corn design is vertical, smaller and more geometric (Plate 90: 1). However, it is to be noted that these examples describe a trend, but changes in the inventory are gradual. Earlier designs continue and maybe some of the designs interpreted as new in Layer E have earlier occurrences that remain undocumented. Most fragments within the contexts are too small for such detailed comparison and can be dated only through the context.
One unique fragment combines the depiction of a profile human comparable to other Middle Nasca examples, but the execution is in incision technique instead of polychrome engobe (Plate 32: 7). This may be an indicator that Middle Nasca is partially characterized by inventions and experiments. However, this heterogeneity of Middle Nasca style becomes just apparent at this advanced moment in the middle of the stratigraphic sequence. Towards the beginning of Middle Nasca, especially as seen in PAP 78, changes in the style are more gradual.

In the upper layers of this unit more inventions can be traced. The depiction of a profile Human (716-1) from layer D is clearly different to the early example cited from PAP 78 (Plate 32: 2, compare to Plate 31: 2-3). Another frontal human (Plate 31: 4) is characterized by simplified hands and feet, although preserving the colored appearance with outlining. A unique design of a face with quartet rays (Plate 13: 8) suggests more innovation in the iconographic canon. AMB depictions appear in a different color scheme (Plate 5: 7) and with dots on the shirt (Plate 6: 5).
Exterior rims are now mostly black, while some earlier Middle Nasca rims still preserved the two color scheme from Early Nasca (716-17, 724-2). Other more conservative traits are also present like balls (716-79), steps and wavy lines on the rim (716-16), corn (Plate 89: 11), lizard (724-4), and washed lines (Plate 102: 3).
In layer B (723) similar designs continue like wavy lines on the rim (723-8), or the ají (723-21).
Other designs are new: a profile trophy head shows a distorted contour similar to the Late Nasca trophy heads (Plate 48: 11). Some geometric designs seem to be new (Plates 45: 8; 97. 11). The banded fish theme has its first appearance within this stratigraphy Plate 75: 3). However, this stylized example lacking the eye and inner segmentation can be regarded particularly young; the design might be older. The interior rim continues mostly black, but still some red bands occur (723-6, 723-7). Among the shapes there are bowls and vases in a similar frequency. Bowls have flaring walls with an inclination around 30°. Wall shapes can be straight, concave or convex. The inventory of layer A (711) has to be interpreted as mixed, because the sediment has be accumulated by water, caused by heavy rainfalls. Indeed there are some features present that would fit into the lower part of the stratigraphy: a two-colored rim (711-3), nested rectangles and interior wall with red engobe (711-6), horizontal bands (711-8), or vertical triangles (711-14). However, other elements seem to be more recent: interlocked snakes (711-17) and a checkered design with diagonal wavy lines (711-1).

Concluding, in can be stated that the vast multitude of different design themes and their varieties known from Middle Nasca contexts can possibly be chronologically divided. Some designs are similar to Early Nasca designs while others are more innovative. Within this stratigraphy there is a tendency that the innovative specimens occur in the upper levels (from layer E1 (733) on), while the more conservative specimens are more frequent in the lower part of the stratigraphy. But, changes are gradual and the impressions from this stratigraphy need further confirmation from other contexts.
A parallel stratigraphy in the adjacent architectural unit might help to confirm or modify the trend observed.

The graphic pattern from the comparative analysis can be interpreted as a clear indicator of stylistic change within the Middle Nasca period A series of traits can be identified as exclusively early in this specific stratigraphic sequence, while another group is exclusively associated with the upper layers. An intermediate group includes the traits present throughout this sequence (Cross table 8).
In general, the traits characteristic for the earlier part of the sequence presented can be traced to Early Nasca antecedents as can be seen on the illustration plates corresponding to the respective theme. Only two of these traits have been identified as predominant Middle Nasca traits: frontal trophy heads with closed eyes, and the vertical ají with colored bands. In contrast, the themes and traits introduced late in the Middle Nasca sequence lack a clear Early Nasca antecedent.
Therefore, as a general conclusion, it can be stated that some Middle Nasca designs are introduced at some moment within the Middle Nasca period, while other design traits that are already present to the beginning of the Middle Nasca period fade out towards the later phases.
It is obvious that this pattern is partially caused by sample bias. For example floating color corn that has been identified here as a late trait is already known since Early Nasca. The present analysis can provide only a rough pattern that suggests the general possibility of subdividing Middle Nasca. The concrete definition of the traits that are introduced later in the Middle Nasca period is still to be regarded as tentative. Further investigations and a larger database are needed in order to refine the pattern. Some additional information is available from the remaining Middle Nasca contexts included in the present study.

Architectural Unit 3 - Cuadro A east (Harris 4, cross table 9)
This architectural unit is situated north to the northern wall of architectural unit 1. Both units are connected by a small access. However, the stratigraphies could not be linked in base of the field reports. Therefore the sequence will be independently discussed and after compared to that from Architectural unit 1
The lowest layer G is without associated material. There is only little pottery from layer F (754): The nested rectangle design (Plate 130: 8) might suggest an early date in the sequence; the AMB with colored lips (Plate 9: 5) is less specific, as is the washed lines design (754-5). Other typical Middle Nasca design traits, but without a significant distribution, are the interior rims that can be red (754-1, 754-2) or black (754-18). On other fragments the entire interior wall is covered with engobe (754-7), a trait that is common in Early Nasca. This layer can not be identified as specifically early or late; this might indicate a temporal position somewhere within Middle Nasca.

Layer D (751) also presents washed lines (Plate 102: 1), vertical large ají (751B-2), a red interior rim (751-1a, 4, 5), a two colored exterior rim (Plate 102: 1; 751B-2), and horizontal bands (Plate 99: 9).There are some parallels to the inventories from the lower layers at architectural unit 1 within the same excavation unit. It should be expected to find some more progressive material in the upper layers 742A-B and 737.

Layer B (742 A/B) is the latest surface of use within this stratigraphy. The material includes a killer whale (Plate 17: 6), a bird with segmented wing and body (Plate 67: 1), ají (742A-7), and snake feathers (742A-5, 742B-1). Interior rims may be decorated red (742A-1, 742A-3, 742B-3) or black (742A-4) or undecorated (742A-6). On one specimen the interior wall is covered with a red engobe (742A-2). Some two colored exterior rims occur (742B-2, 6), but on 742B-2 the buff background and the black rim with a white line fulfills clearly a Middle Nasca scheme. Trophy heads appear frontal (Plate 44: 1-2) or in profile (Plate 48: 2). A fish design of two-colored fish (Plate 76: 1) resembles the frequent Early Nasca fish, but the color scheme has changed and white dots serve as background filling.
The inventory of this layer includes more clear Middle Nasca traits than the lower layers. However, this is not necessarily a sign of change, but only of increased sample size.

Layer A (737) is a constructive filling that bears the possibility of mixing of earlier materials. Indeed, many fragments fit well into the samples from the lower levels of the other observed stratigraphies, like two colored rims (737-13, 16, 18, 40), an interior decorated bowl (737-35), opposed half ovals (737-18), triangles with wavy lines on the rim (737-17), or anthropomorphic legs (737-135). Other designs just lack comparison like a Horrible Bird (Plate 30), viscera (Plate 53: 4), colored snakes (Plate 62: 8), or opposed triangles (737-2). A striped ají (Plate 78: 12) is clearly Middle Nasca for its size and the angular contour, but within this period no chronological change can be defined regarding this design. It seems to persist over a long period without major changes.
Other designs are new in this stratigraphy: profile trophy heads (737-41, 112), small vertical corn (737-8), a frieze of small cactus fruits (Plate 94: 1), and a colored U-band on black (Plate 129: 7).
Two fragments can be interpreted as a stylistic link to Late Nasca: fragment 737-61 presents volute rays, but unlike the Late Nasca volutes, these are more hook shaped; the color scheme is white and red on black. The design association is unknown. Fragment 737-126 features short parallel red and black lines in alternating orientation that resemble the Late Nasca color pattern and also some designs.
The graphic pattern (cross table 9) confirms the late character of layer 737, because most designs documented here have a late beginning in the comparative stratigraphy of Architectural Unit 1. The presence of some traits with earlier occurrence like the ball frieze and the wavy lines on the rim indicate the occurrence of these traits throughout the Middle Nasca period.

Concluding, the late Middle Nasca period is well presented in the sample from 737 and 742. However, the earlier part of the sequence is better defined in other stratigraphies.

Sector A, TP8 (Harris 3, cross table 10)
More comparative material comes from this unit at La Muña. It is the cut that provided the largest amount of material in Palpa. But in the stratigraphy there is only a superposition of not more than three stratigraphic layers. Layer A has been artificially subdivided by the excavator, because of its profoundness and the amount of fragments present. For this analysis, layers A1-A3 are discussed together. Below, (layers B-D) different layers have been recorded; however, these are linked by some fragments. Therefore, layers B and C are also treated together. Now, for the stratigraphic analysis there are three stratigraphic units that can be compared (cross table 10).

At TP 8, the lowest layer D (1300, 1301) includes a large amount of fine iconography, including some unique or rare themes but others that can be compared to the data from other stratigraphies. A good basis for comparison is provided by a frieze of solid colored triangles below the rim (Plate I.27: 2), profile humans with a colored and outlined body (Plate 31: 6-7), an anthropomorphic hand holding crops, on a black background, with a two colored rim, and a red engobe painted interior (1300-3), a frontal trophy head also with a black background and a two colored rim (Plate 43: 8), a dot face frontal trophy head on a spiked streamer (1300-13), a lúcuma (Plate 95: 11), AMB (Plates 7: 3; 8: 5, 7)), snake head darts (Plate 55: 7-8), and an interior decorated bowl. A harvester face (Plate 34: 2) is a good diagnostic for Middle Nasca but few comparative pieces have been found in the stratigraphies. The vessel interior is often completely covered with red engobe (1300-2, 3, 5, 14, 18, 19), or it is decorated with a broad red band (1300-1); other examples have an undecorated interior (1300-6, 11). The interior monochrome engobe and the use of black background for complex themes indicate an early position within Middle Nasca, because these traits disappear completely until Late Nasca. The execution of human figures and the presence of the lúcuma theme can be compared to the findings from PAP 78. On the other hand, the iconography is very fine and includes some unique varieties
Fragments of a head jar with a cross hatched headdress, a band of linked colored ovals and red triangular face markings (1299-9) link layers D (1301 and C (1299) of the stratigraphy. D is the base filling of the floor C. The associated shape of this head jar is a bulbous vase with a concave insloping wall and a flaring rim (Plate I.42: 2). This shape is clearly Middle Nasca, but it seems more related to the earlier part of Middle Nasca, because few bulbous vases occur in Early Nasca contexts, while they lack entirely in Late Nasca contexts.
Layer C (1299) has a similar inventory: a frieze of concentric circles (Plate I.42: 5) links this layer wit the next younger layer B (1286). Other diagnostic designs are a lúcuma (Plate 95: 7), an AMB (Plate 7: 1), triangle frieze (Plate 134: 9), vertical triangles with two colored rim (Plate 132: 6), stars below the rim (Plate 113: 7), snake feathers (1299-11), complex crop design on black background (1299-13, 29), or a streamer on black with cleft points (1299-26). Interior walls are often covered with red engobe or with a broad red band. Fragments that have more innovative characteristics are solid colored humans (Plate 32: 1) (cf. PAP 78), in an interior decorated bowl.
Some of the designs follow the monumental canon of Early Nasca, characterized by few large designs (Blagg 1975). The AMB fragments are too small to identify many details

of depiction, but it the overall appearance with forehead ornament and mouth mask and the arrangement with the head in vertical position seem to persist.
Layer B (1286) is partially linked with layer C (see above). Among the designs present are washed lines (1286-4), a fox (1286-2) large striped horizontal ají (1286-1), corn (1286-7), wavy lines on the rim (1286-12), a multiple crossed horizontal line (1286-13, cf. 751B-5).
In layer B, some of the elements that occur later in the comparative stratigraphies are present: vertical small ají (1286-5), and profile trophy heads with trapezoid head (1286-11, 20).

All designs from layers B-D can be found in layer A (see plates and database for comparison).
There are many traits that have an exclusive occurrence in layer A (cross table 10). Regarding the patterns observed for the other stratigraphies some of these traits can be tentatively defined as particularly late in the Middle Nasca sequence:

- Duck (Plate 63)
- Checkered (Plate 118: 1)
- Bizarre Innovation (Plate 13: 7, 9)
- Solid colored birds (Plate 71: 5-7)
- Beans with red dots (Plate 88)
- AMB with colored lips (Plate 10)
- Banded fish (Plate 75)
- AMB with horizontal head (Plate 8: 1)
- Proliferation (Plates 6: 1; 50: 1-3)

The sample from layer A exceeds in number by far the comparative contexts: In layers A1-3 (1280, 1282, and 1283) together 1380 diagnostic fragments have been recorded. It is to expect, that this large sample provides a larger variety of designs and shapes.
All of the traits observed in the lower layers are also present in layer A.
For interpretation of the pattern the traits that are already present in the lowest layer cannot be interpreted as later innovations. Some of these traits have been already identified as characteristic of the early Middle Nasca period for being very similar to some Early Nasca traits: the AMB with white lips and the lúcuma. The other traits are typical Middle Nasca traits that have been observed throughout this stratigraphy: a streamer with trophy heads between the spikes, a frieze of solid colored balls or triangles below the rim, a flat forehead ornament on AMBs, small corn, and colored depiction of human beings with black outlining.
It can be concluded that the stratigraphy from TP8 starts at some moment within the Middle Nasca period. But, it does not represent the earliest moment of Middle Nasca. It would begin approximately at the time of Unit 8 layer E (740), because most traits belong to the clear Middle Nasca traits but few traits are present that lack in the later layers from Unit 8: the frontal trophy head with open eyes, the AMB with white lips and the lúcuma. Layer A is obviously later but it is to question if it can be as recent as layer B (723) from Unit 8. This is suggested by the presence of several late traits like for example the cursive trophy head, and the hook like volutes in Unit 8.

Due to this marked difference in sample size, the presence and absence of concrete themes is a difficult criterion for the comparison with other contexts. Therefore two kinds of designs from layer A will be presented here: 1) designs that are characterized by a different arrangement or that are stylistically very different to those described above for Middle Nasca contexts, and 2) fragments that are clearly comparable to findings in the lower layers.

Concluding it can be stated that layer A presents an advanced moment of Middle Nasca, but not at all transitory to Late Nasca. Indeed, the small number of Bizarre Innovations and Proliferation in this immense sample is interesting.
Another characteristic worth to mention is the multitude of contemporaneous designs. This has to be remembered for dating purposes:
1) A subdivision of Middle Nasca is only applicable to a large sample
2) The life span of a trait is ample. Subdivisions are best practicable by first occurrence of a given trait

C.1.4 Late Nasca

Parasmarca PAP 196 (Appendix 2, Harris 9-18, Appendix 3, Cross table 11)
From Parasmarca many small excavation units have been included in this study (Harris 9-18). This has been necessary in order to provide a sufficient sample of Late Nasca pottery, because the stratigraphy at Parasmarca was not as deep as at the other sites, and many layers included comparatively few diagnostic material. The stratigraphy at Parasmarca is complex and the traits interesting to the chronological discussion are found in a small quantity scattered in different stratigraphies. As a consequence, the stratigraphic discussion will not proceed by stratigraphy, but by design trait. A series of frequent designs that has been selected for detailed analysis will be discussed according to the chronological position they have been documented in. The procedure of simplified stratigraphy has been explained above (B.1_method stratigraphic analysis) and is similar to that already applied to Los Molinos B and Los Molinos A, unit 3. In case of the Parasmarca stratigraphies this procedure did nit reveal a clear graphic pattern (cross table 11), therefore the traits defined for the analysis will be individually discussed.

Black dots and small rectangles
(Plate 136)
Small rectangles always occur together with black dots as background filling, but black dots are also frequently present without associated rectangles. These traits are present throughout the whole stratigraphy down to layer E in a considerable frequency. In the lower layers at Unit 3 and in TP 5 there is no record, but the reduced sample size does not permit further conclusions.

Girl faces
(Plates 37-39)
The girl faces theme occurs throughout the stratigraphies in a consistent frequency. As a variety the “angular Girl faces” have been defined. These have a square appearance combined with slit line eyes. The four specimens present in this analysis have been

recorded only in layers S-B. This is a possible indicator for a slow change from realistic girl faces to more stylized ones. The stratigraphic distribution is significant. However, the sample size is too small to define this as a rule. Regional differences cannot be excluded.

Step panels and chequered design
(Plates 116; 118)
The step design occurs from Early Nasca on, but with some changes. The beginning of step designs arranged in a panel has its origin in Middle Nasca. But, seemingly this trait persists in a minor frequency in Late Nasca. The typical Late Nasca step is also arranged in a panel, but black. The pattern from the comparative analysis confirms this trend: Black steps occur mostly in layers S-C, with one early example in layer G (3571), while the only example of a colored step is from layer D (3706), the deepest layer in Unit 9 (Harris 18). More examples are required to test this possible trend.
A chequered design of solid black squares on white is known from Middle Nasca on. The few examples from Parasmarca come from layers B-C and do not produce an interpretable pattern.

Late mythical figures
This is a problematic category. As explained above (B.5.2), the classification and identification of fragmented Late Nasca mythical design is a difficult task, because many different figures are composed of the same components: variations of volutes and rays.
Volute rays in general are present in all cuts and all layers at Parasmarca. Colored and solid black rays even appear on the same vessel. These rays are a good diagnostic for Late Nasca pottery, but seemingly do not permit a temporal differentiation. But there are some other components of Late Nasca Mythical beings that are sometimes preserved on fragments. These will be checked according to their value for chronological subdivision.

Star with eye
(Plate 15)
The star with eye is present throughout the whole sequence.

Fan headed AMB
(Plate 11)
The fan headed AMB has is most frequent in the B layers and it has one occurrence in a C layer. However, this comparison is based on a total number of only three fan headed AMBs and the occurrence of this theme in the lower layers of the Parasmarca site cannot be excluded.

Arms and hands
Fragment 3568-7 is a complex design; identifiable components are mouth, tongue, right arm and left hand of an undefined being. It is clearly Late Nasca. Possibly the presence of arms is a relict of the former full body representations of the AMB. The stratigraphic position is in layer E of TP 5 from Parasmarca. This is the stratigraphy presenting the greatest number of superpose layers in Parasmarca (A-H); layer E is situated in the

middle of this sequence. There is an associated ^{14}C age for this layer (sample 1138, see C.2). Associated design traits are girl face, cursive trophy heads, black dots, and a black lobed trophy head. None of these designs indicates a particularly early or late chronological placement.
Fragment 3630-10 from layer C of Unit 3 features a thin angled arm with a square hand, and an angled tongue protruding from an ovoid white mouth. The design belongs to a characteristic Late Nasca mythical being. There is certain comparability to 3568-7. However, the comparative sample is still being too small for any conclusions. Both designs might be assigned a middle stratigraphic position.

Late middle Nasca traits (Plate 13)
In layer D (3621) of unit 3 there are several designs that are unique in the complete sample and might tentatively be interpreted as early variations of Late Nasca. In fact, some of the designs could even be regarded as stylistically latest Middle Nasca, especially two fragments of horizontal AMB. One has semicircular eyes pendant to the forehead ornament (3621-1), the other (3621-3) has a flor de lys mouth mask lateral. Blagg (1975) and Wegner (1976) argue convincingly that the change of the orientation of the head on the late Middle Nasca AMB anticipates the Late Nasca arrangement of mythical figures. In Late Nasca all AMB representations have a horizontal head. The pottery associated to these two designs includes a Middle Nasca ball frieze and a diamond frieze that could be Middle Nasca, where this theme occurs with some frequency (Plate 124: 8). However, other pottery from the same layer is clear Late Nasca, without differences to the remainder materials from Parasmarca: volute rays, girl faces, and a headdress trophy head. Regarding this strong Late Nasca component it is thinkable that the late Middle Nasca pottery had been mixed in after use. There is no layer with material below this context. Further arguments for discussing this layer comes from layer 3615 from which a ^{14}C sample has been analyzed (see chapter ^{14}C); this layer lies stratigraphically directly below 3621. According to the material association the best interpretation to the moment is that the layer is Late Nasca; the stylistically earlier material is intrusive as in other parts of the site, but it seems that the Middle Nasca occupation near there would have lasted until late Middle Nasca.

Mythical figure with rectangular paws
(Plate 12)
These characteristic rectangular paws are easily identifiable even on fragmented pottery. However, the trait can be combined with several mythical figures (e.g. Proulx 2006: Figs. 5.26-5.28; 5.30; 5.32). Fragment 3631-8 presents an undefined mythical figure with rectangular paws and a jagged ray tongue being the only identifiable traits. The style is late and completely different to any Middle Nasca design. Comparative pieces have been observed in higher layers. The stratigraphic position is layer D in one of the architectural units of Unit 3. This layer is also superposed to 3615 with an analyzed ^{14}C sample. The associated pottery is variable including volutes, girl faces and black dots, as well as a variety of characteristic geometric designs.
Fragment 3668-2 preserves a mouth with a quartet ray tongue and rectangular paws; the design is linear black only. Again, more comparative pieces are needed to define a pattern. The stratigraphic position is layer C of unit 9 (Harris 18), a constructive filling overlying the earliest floor of architectural unit 2 (3706).

Fragment 3611-24 is another example of rectangular paws, in this case combined with a trident tongue. The fragment comes from layer B in the upper part of unit 3.
Fragment 1708-1 is one more rectangular paw, with a black volute ray, from layer A of TP 1. Given this situation, rectangular paws can be considered as occurring throughout the sequence at Parasmarca.
A unique trait that might be considered a variation of the rectangular paw is fragment 3662-1 with trident paws that have red nails. Other traits preserved are a complex tongue and a mouth mask with black dots. This example is also from layer A, at unit 9 and has apparently a late occurrence, but comparative design miss.

Variations of volutes
(Plate 14)
Fragment 3567-2 is a rare example of rays: slightly curved parallel lines with diagonal dashes attached, like thorns. There is no comparison possible, but the style is without doubt late. The stratigraphic context is layer D from TP 5 (Harris 11), in the middle of the sequence
The multicolored volutes present on fragment 3557-5 are a unique trait that stylistically might be interpreted as early. In TP 4 there is only one layer below (Harris 10), but there is no basis for further chronological interpretations. Within the layer there are no good diagnostics associated.
Fragment 1709-16 depicts a quartet ray. Associated within the same layer are girl faces, a fan headed AMB and other very characteristic Late Nasca designs. Quartet rays cannot be interpreted as particularly early Late Nasca traits. The stratigraphic position is layer B at TP 1 (Harris 9).

Trophy heads
(Plates 51, 52)
Cursive trophy heads occur predominantly early in the sequence, in layers C-E, with only two examples from layers A and S. For the relative frequency of this theme in the lower layers, this pattern seems not to be caused by sample bias. Possibly they present an early trait of Late Nasca. This is supported by the fact that Wegner in his style seriation defines by far more Nasca 6 trophy heads than Nasca 7 (Wegner 1976: plate 17-20) (see C.3).
The second most frequent category of trophy heads at Parasmarca is the trophy head with a headdress. It occurs only in Layers D and C at Parasmarca. In analogy to the cursive trophy head it can be interpreted as an out fading theme.

A profile trophy head with a black hair lobe is from layer E (3568) in TP 5. This can be regarded as a late variety of the profile trophy head with black hair lobe, frequent in Middle Nasca. It still preserves the characteristic black hair at the forehead, although the overall appearance is clearly different (cf. Plate 48).

A unique example of a late realistic trophy head with elongated eyes has been found in layer A (Plate 51: 7). This association presents no interpretable pattern; trophy heads are extremely rare in the upper layers at Parasmarca.

Half circle on inner rim

(Plate 128)
This theme occurs exclusively in association with layer A and is the best diagnostic of the Loro style present in Parasmarca. The design differs markedly from Nasca designs.

Late fish
(Plate 77)
The late fish characteristic pointed oval with attached half circle fins occurs throughout the sequence at Parasmarca; no specific pattern is determinable.

C.1.5 Vertical stratigraphy: Conclusions

Through the analysis of the vertical stratigraphy it has been possible to identify some design traits and very few shape traits that have a distinct temporal distribution within one of the major periods. The definition of such traits is the precondition for defining subphases. The evidences from Palpa indicate that temporal varieties occur in all four periods. However, the chronologically distinct traits can only be detected when they are preserved in a sufficient quantity in order to define a concrete pattern.
The identification of these temporal distinct traits for subdivision of the periods is a chance when working with a huge database from stratigraphic contexts. In this case the differentiation facilitates a more detailed interpretation of the contexts. Instead, in case of a small surface collection or in case of isolated small contexts the presence of one or two of these traits is not sufficient to apply this phase distinction. The absence of these traits never will serve as an argument. Sample bias may always be responsible for the absence of a trait in a given context.
The changes between the early and late subphases within the periods are very gradual and refer only to a small part of the complete inventory of shapes and designs. Possibly, further examinations will provide more data to prove this differentiation and to identify more distinct traits.

Initial Nasca
There is very limited evidence for a subdivision of Initial Nasca. It is probable that the only stratigraphic cut included in this study does not cover the complete sequence (see also C.2). There is a good chance for stylistic change, because during Initial Nasca the change from Paracas and Chongos style related pottery to the polychrome Nasca tradition took place. The small scale excavation from Estaquería shows some significant distributions. If parts of this pattern can be confirmed by future investigations this would help to better understand the complexity of this interesting period that up to now has been widely neglected by the archaeological research.

Early Nasca
The Early Nasca period as it is definable based on the stratigraphies at Los Molinos presents stylistically a widely homogeneous block. The many fine distinctions known from complete vessel seriation (Proulx 1968) are simply not applicable to fragmented pottery. The sample of this study allows only the identification of some possible phase markers that characterize an earlier and a later moment of this period. There is surely some development within the approximate 150 year duration of Early Nasca and it is

possible that further studies will help to a more comprehensive definition of these phase markers.
The beginning of Early Nasca is characterized by a stylistic explosion, the sudden appearance of a great variety of contemporaneous designs, all absent in Initial Nasca.
Some designs have been defined as particularly early: the crescent frieze, low walled bowls, finger/toe lines not crossing, turned U design. However, the problem of transition from Initial Nasca to Early Nasca is not totally solved with the materials from Palpa. It seems that the stylistic gap between the two periods is not only attributable to a sudden appearance of Early Nasca, but some kind of transitory phase has to be defined through future investigations.

Few themes seem to have developed later in this period, e.g. corn, concentric rectangles, straight fish, and worm. But these themes did not replace the earlier themes. These continued in use until Middle Nasca. Therefore, the later part of Early Nasca is characterized especially by an increased variability.
On the feature level, i.e. concerning the variations in theme, so far it is not possible to make sound chronological distinctions. The immense variability of traits observed in some contexts, e.g. layer 824 in Los Molinos B indicates the contemporaneous variability of Early Nasca Style.

Middle Nasca
In Middle Nasca the evidences for a chronological subdivision are better. During this period profound changes towards the Early Nasca design canon take place.
The beginning of Middle Nasca is still marked by a gradual transition. The design is essentially Monumental style and very similar to Early Nasca, but the size of the designs and the use of space change. The transition can be observed in the two contexts at PAP 78.

The early part of Middle Nasca is characterized by floating color beans, cleft points, sling design, large frontal trophy heads with opened or closed eyes, lúcuma, and concentric rectangles.
Soon there appear Middle Nasca traits that are less similar to Early Nasca: These are wavy lines on the rim, humans with colored body, vertical band ají, washed lines, solid colored triangles or ball frieze below the rim of vessel that have a characteristic Middle Nasca shape, like vases or deep flaring bowls.
This trend can be observed in the upper layers of TP 2 and TP 3 at PAP 78, and in the lower layers of the stratigraphies at La Muña.

In the mid part of the La Muña stratigraphies the character of style changes and more innovative Middle Nasca designs prevail. However, the earlier traits still persist to some degree. Traits defining the later part of Middle Nasca are: solid colored birds, Bizarre Innovations, proliferation of design through the appendage of hair hanks, arrangement of design in several panels, concave-convex bowl shapes, miniature crops like small vertical ají, small beans with red dots and small corn, solid colored humans, trophy head with trapezoid head, banded fish, or the AMB with colored lips.

The change to Late Nasca becomes apparent only through very few traits observed in the uppermost layers of Unit 8 at La Muña. These include changes in the depiction of trophy heads towards a stylized cursive appearance and the use of volutes.

These lists are not intended to be complete and future studies will help to refine the definition of early and late traits. So far, the general possibility of subdividing the heterogeneous Middle Nasca period has been proved.

Late Nasca
Late Nasca in Palpa is characterized by a homogeneous block of recurring design traits and themes, like girl faces, black dots and small rectangles, and volute rays. Up to the moment the most significant variation that can be defined is the merely absence of trophy heads in the upper stratigraphic layers at Parasmarca.

The possibility of a subdivision of the Late Nasca sample is especially of interest because there is very little evidence of a transition from Middle Nasca to Late Nasca in Palpa. A transition becomes apparent in some unique fragments from La Muña (see above) and in some late Middle Nasca traits observed at Parasmarca. The stylistic gap is reflected by a gap in the numerical data (see C.2). However, the hypothetic transitory phase is probably not a complete settlement period, but only a sample bias lacking the latest Middle Nasca and the earliest Late Nasca contexts. The absolute duration might be calculated with 25-50 years. Future studies have to reveal to what extent this transitory phase is present in Palpa. There is a possibility that the changes took place in another part of the Nasca area and the Late Nasca style has been introduced in Palpa later, in an advanced stage.

C.2 Numerical Chronology

While the present study is principally concerned with relative chronology, it is interesting to link the relative sequence to the numerical dates available. By this, it will be possible to approximately determine the time spans embarked by the relative periods. This information helps to sort out stratigraphies that cover a large time span, because here it is most likely to trace stylistic changes in the stratigraphy. It is to note that a physically deep stratigraphy is not necessarily a chronologically deep stratigraphy.
Another use would be for the comparison of contexts that are not directly linked by stratigraphy. These can be related by stylistic analysis of the associated objects. ^{14}C ages can serve as an additional – tentative – argument for chronological comparison of these contexts.

Within the Palpa project archaeologists use to work in close cooperation with partners from natural sciences concerned with scientific dating. During the past years, Bernd Kromer and Ingmar Unkel of the *Forschungsstelle Radiometrie* at the Heidelberg Academy of Sciences processed about 60 organic samples that are related to Nasca contexts. This database is the backbone of a very detailed regional ^{14}C chronology for the Nasca culture in the Palpa area (Unkel et al. 2008; Unkel/Kromer 2009) (Table 29). A comparable number of samples have been analyzed only from Cahuachi (Llanos 2007; Orefici/Drusini 2003; Ziolkowski et al: 1994), but the contexts of these samples

and the associated material remain widely unpublished (Siegle 2007). The numerical sequence from Palpa has already been discussed in detail from the technical and methodological point of view (Unkel 2006; Unkel et al. 2008; Unkel/Kromer 2009).

Additionally, the ^{14}C date from Palpa has been discussed from the archaeological point of view (Siegle 2007). ^{14}C ages provide no direct dating of archaeological contexts, but only a time span the organic sample material is likely to have lived in. Therefore, a thorough evaluation of available ^{14}C data is necessary. The archaeological value of a ^{14}C date depends directly on the context the sample has been found in. Especially the association of diagnostic pottery and the stratigraphic position of the context are of interest, because this information allows the linking of the numerical and the relative sequence. Also the kind of sample material – i.e. an annual crop or a 200 year old wood with possible reuse – is important to the archaeological interpretation.

The database of the present study does not include all the contexts where ^{14}C samples have been taken from. The choice of contexts for the present sample has been based primarily on the quality of stratigraphic information and on the number of diagnostic fragments included. But, some of the ^{14}C dated contexts can be directly linked with the stratigraphies analyzed for this study. These contexts will be presented and discussed in this chapter, in order to define in numerical terms the time spans reflected by the relative periods defined here (see previous chapter). A revision of the numerical chronology presented for Palpa (Unkel 2006; Unkel et al. 2008; Unkel/Kromer 2009) or for the remaining Nasca area (Rowe 1967; Silverman/Proulx 2002) is not intended here because it would require a discussion of all available ^{14}C data and the corresponding contexts. So far, the Palpa numerical sequence (Table 29) will be used as the system of reference because it is based on a thorough scientific and archaeological discussion of a considerable amount of ^{14}C samples.

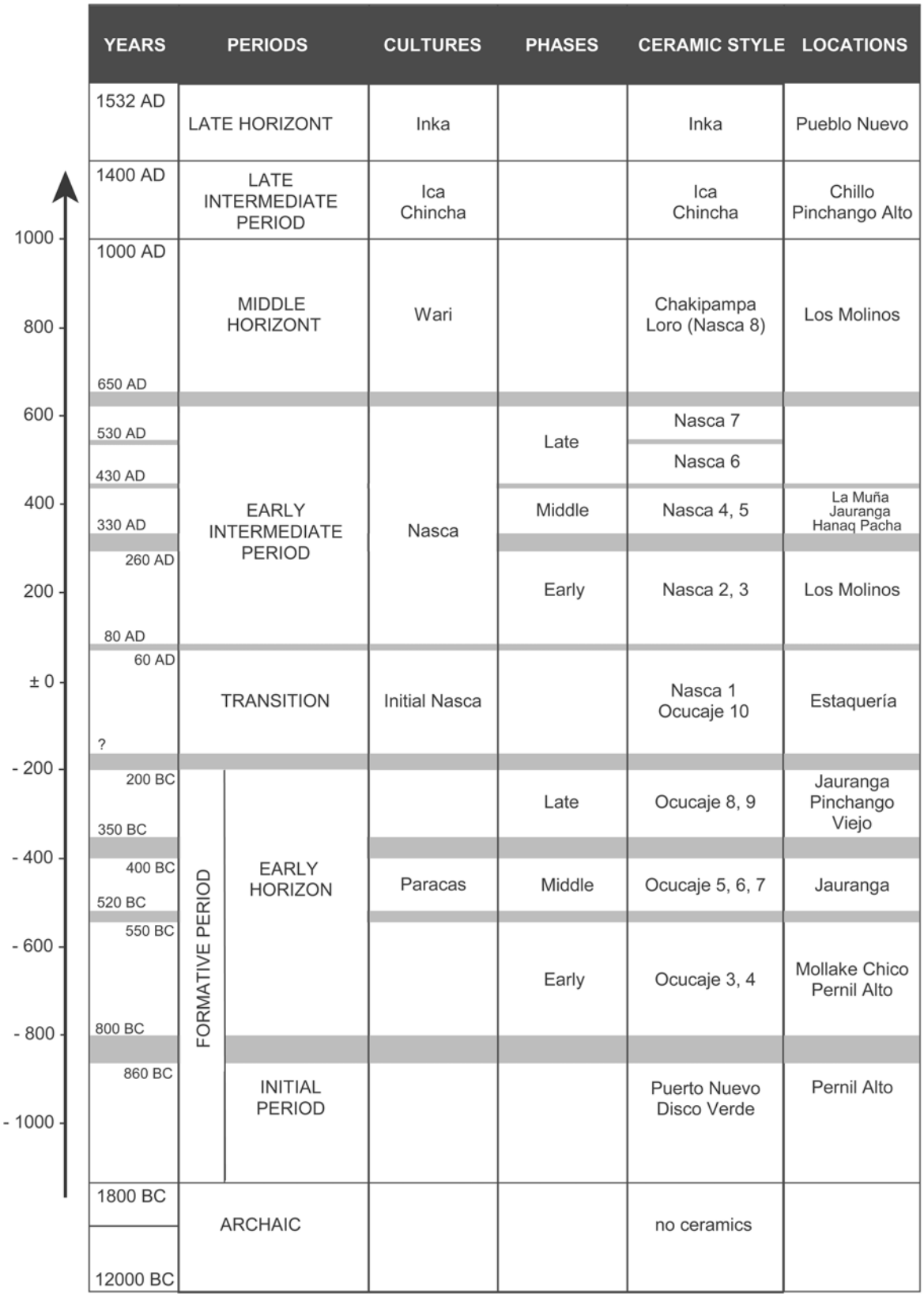


Table 29: Numerical chronology in Palpa (Unkel et al. 2008)

The contexts related to the stratigraphies presented in this study will be shortly presented and discussed. The samples and their ^{14}C ages are presented in Table 30; the discussion of the ^{14}C data will be structured by site provenience.

Invent nr.	Analysis nr.	Type	^{14}C age +St. dv.	1-σ age range (cal AD/BC)	Site	Feature nr.	Sample material
383	HD-24071	GP	2047±24 BP	45 BC–50 AD	PAP-73D	112	wood
383	ET-366	AMS	1970±45 BP	20 AD–130 AD	PAP-73D	112	wood
384	HD-24072	GP	1992±16 BP	20 AD–80 AD	PAP-73D	112	wood
385	HD-24073	GP	2020±22 BP	20 BC–65 AD	PAP-73D	112	wood
386	HD-24066	GP	2086±29 BP	95 BC–5 AD	PAP-73D	104	wood
387	ET-364	AMS	2005±45 BP	40 BC–90 AD	PAP-73D	104	charcoal
10	Bln-5237	GP	1694±27 BP	350 AD–430 AD	PAP-93A	486	charcoal
11	Erl-3093	AMS	1858±38 BP	130 AD–240 AD	PAP-93A	514	bean
12	Erl-3094	AMS	1934±39 BP	50 AD–140 AD	PAP-93A	513	bean
13	Bln-5238	GP	1727±30 BP	270 AD–390 AD	PAP-93A	280	wood
41	LuS-50047	AMS	1778±49 BP	240 AD–390 AD	PAP-93B	820	wood
42	LuS-50045	AMS	1719±38 BP	260 AD–420 AD	PAP-93B	868	charcoal
69	LuS-50050	AMS	1749±57 BP	250 AD–410 AD	PAP-79B	743	wood
70	LuS-50051	AMS	1707±36 BP	260 AD–430 AD	PAP-79B	746	charcoal
103	LuS-50053	AMS	1821±36 BP	140 AD–330 AD	PAP-79A	1282	charcoal
1119	Hd-28422	AMS	1443±22	604 AD-641 AD	PAP-196	3487	wood
1121	Hd-28250	AMS	1740±23 BP	253 AD-334 AD	PAP-196	3510	wood
1125	Hd-28570	AMS	1519±16	540 AD-572 AD	PAP-196	3615	wood
1126	Hd-28247	AMS	1487±16 BP	565 AD-600 AD	PAP-196	3695	wood
1138	Hd-26753	AMS	1581±25	432 AD-534 AD	PAP-196	3568	wood
1140	Hd-26796	AMS	1610±26	410 AD-532 AD	PAP-196	3669	wood

Table 30: ^{14}C samples from Palpa related to the stratigraphies discussed in this study.

C.2.1 Initial Nasca

Initial Nasca 50 BC-60/80 AD (1-σ) (Unkel et al 2008: 557)
^{14}C ***samples 383-387***
All the ^{14}C samples used to establish the Initial Nasca part of the numerical Palpa sequence (Unkel 2006; Unkel/Kromer 2009; Unkel et al 2008) can be directly related to a stratigraphy discussed in this study, from the excavation at Estaquería (cf. Appendix 1; Appendix 2, Harris 1). Based on these samples Unkel and Kromer (2009: 237) calculate a 2 σ boundary of the Initial Nasca period of 120 BC to 90 AD. The 1-σ lower boundary would be at 50 cal BC (Unkel et al 2008: 557). This boundary leaves a clear uncertainty gap towards the preceding Late Paracas period that has to be filled with further excavation data. At the upper boundary with Early Nasca the gap is much smaller, but also existent.

The features that have a related ^{14}C age are feature 104 and feature 112. Interpreting the ^{14}C ages of the samples in their stratigraphic context it is interesting to note that the time span covered by the dates from the more recent layer 104 (samples 386, 387) and the earlier layer 112 (samples 383, 384, 385) lie close together. In its 1 σ range sample 386

is even earlier than stratigraphically earlier samples 383 and 384. The stratigraphy indicates that both layers are probably chronologically closer than the complete time span calculated for Initial Nasca would suggest. This coincides with a marked homogeneity in the shape and design inventory documented in this stratigraphy.
The samples are of wood and in one case of charcoal so that a later reuse of the material cannot be excluded. As an estimate, based on the architecture (superposed adobe floors, modifications of walls in one case; see Appendix 1) and on the homogeneity of the associated findings, the time range is not more than 50 years. The transition towards Early Nasca is only capable in one fragment from the surface layer and the transition to Late Paracas remains totally unknown. Further excavations are required in order to document the transitory contexts important to define exactly this part of the sequence.

C.2.2 Early Nasca

Early Nasca 60/80AD-260 (1-σ) (Unkel et al 2008: 557)
^{14}C ***sample 13***
The sample is from Los Molinos sector A, Unit 3. It is a piece of wood taken from the covering of a burial. The matrix of the burial has been recorded just below the surface layer (278). It is an intrusive burial that cuts the Early Nasca architecture present at the site. The burial has been looted in recent times; therefore no associated pottery is available. The funeral structure and its stratigraphic position suggest a Middle Nasca burial; so do other intrusive burials with associated pottery at the site (Reindel/Isla 2001). The ^{14}C age of the wood is 1727±30 BP cal (1-σ) or 270 – 390 AD. This date marks the time of reuse of the site as a cemetery. The exact time gap between the abandonment of the site and its reuse as a cemetery is unknown. According to the stratigraphy at PAP 78, there is a certain gap between the end of Early Nasca and the Middle Nasca use of the Los Molinos site. The ^{14}C age marks a terminus post quem for the cemetery use of the Los Molinos site in the Middle Nasca period. In the numerical sequence for the Palpa area the beginning of Middle Nasca is defined at 325cal (2-σ) (Unkel and Kromer 2009: 238). Sample 13 from Los Molinos with its stratigraphic position fits perfectly in this scheme.

^{14}C ***samples 10, 11, and 12***
These samples all come from the same stratigraphy, so they will be discussed together. The stratigraphy is situated at Los Molinos, sector A, within the excavation unit 2. Sample 10 (feature 486) and sample 11 (feature 514) are taken from the same architectural Unit. Sample 12 (feature 513) is taken from the adjacent corridor. The possibility of linking both stratigraphies will be evaluated below.
The age of 1694±27 BP cal (1-σ) or 350 – 430 AD for layer C (486) already falls into the Middle Nasca period (325-440cal). This corresponds well to the documented pottery from this layer. The few examples are all clear Middle Nasca. This context (layer C) constitutes a moment of reduced settlement activity observable in some of the upper layers at Los Molinos (see chapter C.1.2).
Layer J (514) is the lowest layer in this architectural unit. It clearly corresponds to the beginning of building and settlement activities in this part of sector A at Los Molinos. It is a constructive filling placed to level the natural terrain. The age of the sample has been declared as 1858±38 BP cal (1-σ) or 130 – 240 AD. The associated material is

clearly Early Nasca. Interestingly, in this context some of the stylistically earliest ceramics have been found. These are the low walled bowls with a marked base angle and a simple geometric decoration already discussed above (Plates I.15: 1-6; I.32: 4-9; 126: 6-11) (C.1). The ^{14}C sample has been taken from a bean and is therefore likely to present the moment of use of the associated floor. The transition from Initial Nasca to Early Nasca had been defined at 90 AD cal (2-σ) (Unkel/Kromer 2009:237). According to this, the age from layer 514 seems too young within the 1-σ range, as it presents stylistically one of the earliest Early Nasca contexts known from Palpa. On the other hand, the context is a constructive filling and stylistically older material could well be mixed with other more recent. In fact, this is the situation in context 514: there are some clear Early Nasca examples that are clearly comparable to the material from the other layers above.
Additional data is available from layer 513 in the adjacent corridor, where it also constitutes the earliest moment of use. Layer 513 is a floor. The corresponding base filling has been left unexcavated. It is likely that this filling corresponds to the filling 514, but the stratigraphic relation of both contexts is not completely cleared. Both contexts can be considered as more or less contemporary; maybe layer 513 is slightly more recent. The ^{14}C age has also been taken from an associated bean. The age is 1934±39 cal (1-σ) or 50 – 140 AD BP. This fits perfectly in the transition from Initial Nasca to Early Nasca. It is an indicator that in case of 514 the 2-σ range has to be considered.

Taking together the stratigraphic information and the ^{14}C data there remains a possibility that the true transitory contexts between Initial Nasca and Early Nasca have already not been documented. These would correspond stylistically to some surface findings at Estaquería and to some of the findings from 514. The presence of this pottery at Los Molinos suggests that the beginning of the site falls exactly in this epoch of transition, only that the earliest structures of the site have probably not been uncovered yet. The findings from 513 do not help in this aspect. There are only two fragments associated to 513, both are diagnostic Early Nasca, but their characteristics do not explicitly implicate a very early age.
As can be seen, the stratigraphy from Los Molinos A, Unit 2 embarks probably the complete Early Nasca sequence, stylistically as well as in numerical terms. The only exception might be the transitory phase from Initial Nasca. Consequently, if there is a possibility of stylistic subdivision of the more than 200 years lasting Early Nasca style, based on stratigraphy, it should be determinable from this stratigraphy. Due to the little material from this stratigraphy as compared with the amount of iconographic variation known from Early Nasca pottery, in basis of this sample only some general trends can be shown and it can be assessed if further studies upon an Early Nasca subdivision are a promising challenge (see C.1.2).

^{14}C ***samples 41 and 42***
These two samples have been taken at Los Molinos Sector B (Apendix 1).
The stratigraphically lower sample 41 is a wooden post from feature 820, a floor of use. This feature is layer C of a deep and complex stratigraphy. The layer itself has no related pottery, but the above layer (833/838) has. Additionally this floor is related to the stratigraphy of the adjacent corridor. The age of the wood is dated as 1778±49 BP

cal (1-σ) or 240 – 390 AD. Sample 42 is a piece of charcoal from a fire pit directly underlying the surface layer. The associated date is 1719±38 BP cal (1-σ) or 260 – 420 AD. There is no material associated to this sample, only the surface material above. Both dates are close together as is their stratigraphic position. Both dates tent to mark the end of the Early Nasca sequence falling well into the range of the 325 AD cal boundary between Early Nasca and Middle Nasca. Regarding the stylistic comparison of Middle Nasca materials from Los Molinos to those from La Muña and PAP 78, the Middle Nasca component at los Molinos is related to an advanced moment of the Middle Nasca sequence, rather than to its beginning.

The beginning of building activity in Sector B of La Muña remains undetermined in numerical terms. There is a deep stratigraphy below sample 820 that might account for a long duration. Stylistically it can be stated that there are earlier elements to be found within the lower layers, but the earliest elements like those known from sector A are lacking. So it can be estimated that the beginning of Sector B is slightly later than the beginning of Sector A (C.1).

C.2.3 Middle Nasca

Middle Nasca 260 AD-430 AD (1-σ) (Unkel et al 2008: 557)
^{14}C ***samples 69, 70, and 103***
The Middle Nasca samples discussed here are all from La Muña. Samples 69 and 70 come from the same stratigraphy and will be discussed first. The samples come from layers F (743) and G (746) of a deep stratigraphy. Below is only layer H (755). Therefore these two samples represent the older extreme of the stratigraphy, while the younger end of the stratigraphic sequence remains unknown.
Through the ^{14}C ages the beginning of this stratigraphy is dated to 1707±36 BP cal or 260–430 AD (1-σ) and 1749±57 BP cal or 250–410 AD (1-σ). Both ^{14}C ages fall approximately in the same range and correspond well to the Early Nasca – Middle Nasca boundary. On the other hand, the time span within the 1σ range embarks nearly the complete Middle Nasca period as it has been calculated lasting from 325-440 AD cal (Unkel/Kromer 2009).

The third ^{14}C date from La Muña related to a stratigraphy discussed in this study is sample 103 from sector A, TP 8, feature 1282. Layer 1282 is the middle section of a broad constructive filling that has been arbitrarily subdivided by the excavator due to the amount of material present. In fact features 1280, 1282, and 1283 can be regarded as the same stratigraphic unit. This is confirmed by some fragments of the same vessel spread over all three layers (C.1). Hence, the date comes from the uppermost layer of this stratigraphy: it is 1821±36 BP cal (1-σ) or 140–330 AD. This date is closer to Early Nasca than to Middle Nasca. It is too early as compared to the pottery associated. The pottery from 1282 is full developed Middle Nasca that bears little to no similarity to Early Nasca. It is more related to the later part of the sequence (C.1). It has to be taken into account that the ^{14}C sample is from a piece of charcoal and a reuse, burning an older wood is probable.

C.2.4 Late Nasca

Late Nasca 530-650AD (1-σ) (Unkel et al 2008: 557). Within this 1 –σ calculation a time gap of 100 years is left between the end of the Middle Nasca Period and the beginning of Late Nasca. Future investigations have to reveal if this gap corresponds to Dawson's Nasca 6 phase so far not documented in Palpa as an isolated phase, or if it rather would be a short and stylistically little defined transitory phase that would have to be searched for in the latest Middle Nasca contexts and in the earliest Late Nasca contexts (see C.1).

Up to present date, six ^{14}C samples from Parasmarca have been analyzed. Five of these samples can be related to one of the stratigraphies analyzed within this study. The sixth one belongs to the funeral structure of a Loro burial and will be included in the discussion because the stratigraphy is simple. The samples all come from different excavation units and are not stratigraphically related. Therefore they will be discussed here together, by chronological order from early to late, according to the 2-σ age range.

240- 381 AD cal	feature 3510, Unit 6 (Harris 16)
401- 536 AD cal	feature 3669, Unit 9 (Harris 18)
422- 541 AD cal	feature 3568, TP5 (Harris 11)
443- 600 AD cal	feature 3615, Unit 3 (Harris 14)
545- 615 AD cal	feature 3695, Unit 12 (Loro burial)
577- 649 AD cal	feature 3487, Unit 5 (Harris 15)

A first revision of the ^{14}C dates from Palpa is interesting as there are two dates that fall clearly in the time before 530 AD cal that has been defined by Unkel et al (2008) as the beginning of Late Nasca. The earliest age is 240- 381 AD cal imbedded in the lower part of the stratigraphy at Parasmarca, unit 6, architectural unit 2. This age falls within the Middle Nasca period, but there is no direct pottery association. The closest association is from layer A. The wooden post has been cut by fire before placing the constructive filling (3504), and the corresponding floor (3503). The closest material association is from the time of collapse of the structure in layer A (3502). The wooden post gives a terminus post quem for this material. The early date of 240- 381 AD cal clearly predates the context. The stratigraphic distance of the ^{14}C sample and the collapse of the above structure and the further possibility of reuse of the wood do not allow a concrete calculation of the age of the structure.
The second oldest age from Parasmarca is 401- 536 AD cal. This falls exactly within the time gap between Middle Nasca and Late Nasca. The sample has been taken from layer C (3669) at Unit 9 at Parasmarca. The layer itself has no pottery association. In the lower layer (3707) only one diagnostic fragment has been recovered. The fragment is much eroded and shows colored bands with black outlining on a white background in an undefined arrangement. The best time guess would be Late Nasca for the color scheme and the complexity of design. The above layer (3663) includes a good sample of diagnostic Late Nasca pottery. The layer represents a second building period including a slight modification of the architecture. Before, the structure consisted of two architectural units (3669 and 3710), divided by a wall. With the construction of floor B (3663) this wall has been covered and one larger architectural structure has been used. Consequently, the remains from the other side of the wall are more or less

contemporaneous to feature 3669, representing the same building period. The associated material can be used as an extra argument for defining the cultural context of the ^{14}C sample. It results that layers 3710 and 3668 on the other side of the wall have some very diagnostic Late Nasca pottery associated (see database). Hence, the context related to the ^{14}C age is clearly Late Nasca. It is so far the earliest age related to the settlement activity at Parasmarca. However the closest related pottery from layer 3668 is not particularly early; it is stylistically clear Late Nasca. Possibly the wood from the sample has been reused.

Two further samples fit exactly into the time span previously determined for Late Nasca:
Sample 1138 has been taken from layer E (3568) in the lower part of the deepest stratigraphy recorded at Parasmarca, in TP 5 of sector B. The numerical age is within the range of 422- 541 AD cal. The surrounding context is a constrictive filling. Cultural material has been recovered from the same filling as well as from the adjacent layers above (3567) and below (3570). All the diagnostic materials indicate a clear Late Nasca context of the sample (C.1).
The age is being supported by sample 1125 from sector A, Unit 3 at Parasmarca. The determined age is 443- 600 AD cal. The sample is a piece of wood, associated to the natural surface and covered by a constructive filling (3621). The sample serves as a terminus post quem to the beginning of construction at this place. The pottery in the filling above is majorly diagnostic Late Nasca; however, few Middle Nasca and Initial Nasca pottery is mixed in.

The end of the Late Nasca settlement activities at Parasmarca is marked by the construction of funeral structures intrusive to the abandoned Late Nasca architecture. These burials are related to the Loro pottery style of Middle Horizon. The funeral contexts have not been included in the present study. The ^{14}C ages analyzed up to now date the construction of the Loro burials and hence the end of Late Nasca to 545- 615 AD cal and 577- 649 AD cal (2-σ). The ages slightly predate the beginning of the Loro period around 650 AD cal, according to Unkel et al (2008). This may be due to the possible reuse of the wood. It seems that the end of settlement activity and the burial use of the site are temporal close together.
The upper (younger) end of the Late Nasca Period can be regarded as well defined. the older extreme towards the Middle Nasca period requires some further investigation. The data from Parasmarca indicates that possibly the time span 530-650 for Late Nasca can be slightly extended towards the latest Middle Nasca dating around 430 AD cal.
However, this time gap is not sufficient to define a Nasca phase 6 as transitory between Middle Nasca and Late Nasca; the gap seems more related to the lack of ^{14}C sample.

C.3 A comparison of the Palpa sequence and the Dawson sequence

The presentation of the materials from Palpa in this study allow for the first time to test Dawson's Nasca sequence comparing it to sequence entirely based on a sample from one valley. The reduced applicability of the Dawson sequence to the pottery from Palpa was the reason for the present study. Now the concrete differences can be defined. Initially it had been suggested that the existence of regional variations within the Nasca

style would constitute the principal problem. Now, in order to identify possible regional differences (Proulx 1968) or to relate contemporaneous stylistic differences (Blagg 1975) to the regional distribution, for each Dawson phase discussed in the following the valley provenience of the pottery will be cited and compared with the Palpa material.

The comparison of the sequences will proceed to identify first distinct traits defined for the Dawson seriation (A.5) within the Palpa material. On this base each phase of the Dawson sequence will be discussed under consideration of its stratigraphic position within the Palpa sequence and the associated pottery. The terminology applied for the classification of shape and decoration from Palpa is the same as that of the Dawson approach and facilitates this comparison. The terminology for shape classification is slightly different, but a comparison of shape characteristics is still possible (Table shape comparison).
However, in the concrete definition of phases or periods there are some important differences between both sequences. These differences will be stressed here. The discussion will be structured by Palpa settlement period and within these by Dawson phase. Not all Dawson phases will be discussed to the same extend, but the problematic phases Nasca 2, 4, and 6 will be treated in some more detail.

C.3.1 Initial Nasca

Nasca 1
Menzel, Rowe, and Dawson (1964) define the use of polychrome engobe painting in combination with incision as the outstanding characteristic that marks the beginning of Nasca 1. According to this definition Nasca 1 is nearly absent in Palpa. Within the sample from Estaquería there is no single fragment featuring this characteristic.
But the original definition of Nasca 1 (Menzel/Rowe/Dawson 1964) includes other decorative techniques that are reflected in Strong's type definitions (A.5.2.1). These types correspond to the Initial Nasca pottery from Palpa. According to this definition, Initial Nasca or Nasca 1 pottery is also comparable to the Chongos phase pottery of the Topará style from Cañete, Chincha and Pisco. According to Wallace (1986: 39) the Initial Nasca pottery known from Ica and Nasca can be regarded as a local adaptation of Topará traits.

The regional distribution of Nasca 1/Initial Nasca pottery confirms the special character of the polychrome incised style. So far, the only valley where the incised polychrome type occurs with some frequency is Nasca, and here principally the site of Cahuachi, but even here it constitutes only one of several contemporaneous types of technically very different pottery (Strong 1957). Nasca 1 is thought to be the time of the beginning of monumental construction at Cahuachi and of the site's focus as a ceremonial center Silverman and Proulx (2002:164). The building of the ''Step-Fret Temple'' dates to Nasca 1 (Silverman/Proulx 2002: 101). From other sites of the Southern Nasca area there are little evidences. Recently at the La Puntilla Site the transition from Late Paracas to Initial Nasca could be documented. Most diagnostic Initial Nasca pottery are reduced fired blackware sherds. Apparently no polychrome incised pottery has been encountered (Vaughn/Van Gijseghem 2007).

As in Palpa, in Ica the polychrome incised pottery lacks almost completely (MRD 1964:251). But, the remaining Initial Nasca types are present. Massey (1992) illustrates some IEP 1 pottery from the upper Ica valley. Dawson's original definition of Nasca 1 is based on burial association and has been further confirmed by the stratigraphic evidences from an unpublished test pit at La Peña de Ocucaje (Menzel/Rowe/Dawson 1964; Menzel 1971: 58). Only later, Dawson could compare it to stratigraphic evidence from settlement debris at Cahuachi (Strong 1957). Aldo Rubini excavated 18 Initial Nasca burials at the Pinilla sector of Ocucaje. The association of objects in the burials has been documented carefully and these are the materials Dawson used for his definition of Nasca 1. The objects have been cited in several instances as representing Nasca 1 in Ica, but the burials have not been published systematically (Carmichael 1988; Silverman 2002a).
From Ingenio there exist some surface collections that do indicate settlement activities in association with Nasca 1 pottery in settlements of considerable size (El Estudiante, Ventilla). Only a very small part is of the Cahuachi Polychrome incised type (Silverman 1992: 37). More details of the material have not been published.
From the valley of Acarí Nasca 1 has not been documented, but a contemporaneous local style exists (Silverman/Proulx 2002: 87).

C.3.2 Early Nasca

Nasca 2

Very little diagnostic Nasca 2 pottery has been excavated in Palpa. The examples from Los Molinos A are found in association with Early Nasca/Nasca 3 pottery. During surface surveys in the Palpa area some sites with a Nasca 2 component could be identified (Johny Isla personal communication, Browne 1992). However, the evidence is not so strong as to suggest a further settlement period between Initial Nasca and Early Nasca.
Nasca 2 pottery can rather be interpreted as the first moment of Early Nasca. In Palpa it is a short transitory phase that is difficult to document. The interpretation of Nasca 2 pottery as part of Early Nasca is confirmed by the fact that it is this style that marks the end of the monochrome tradition known from Initial Nasca.
Interestingly, all the Nasca 2 pottery identified in Palpa belongs to the simple geometric decorated pottery. The character of the earliest mythical decorated pottery remains undetermined by excavation evidences (see A.5.2.2)
It is obvious that the problem of defining Nasca 2 in Palpa from excavated evidences is related to the time gap between Initial Nasca and Early Nasca as revealed by the ^{14}C data. At presence the situation can be interpreted as a 50 years gap approximately that has to be filled. The question that arises is if the polychrome style including the technical advance has been brought from another valley, or if it has been developed in Palpa. A foreign origin would explain the relative scarcity of transitory pottery in Palpa as compared with the sudden immense variation of Early Nasca/Nasca 3 pottery present at the lowest levels of Los Molinos.

Up to now, the only Nasca 2 contexts from excavations all come from the Nasca area. In concrete, these are some stratigraphic layers at Cahuachi (Strong 1957) and some

burials excavated by Kroeber (Kroeber/Collier 1998). In Ica apparently no Nasca 2 pottery has been documented.
Massey (1992: 221) reports for the upper Ica valley continuity from phase Nasca 1. Nasca 2 pottery accounts for only 1% of the pottery from her surveys, but there are evidences of a local variation, the Campana style defined for the valleys of Cañete, Chincha and Pisco (Menzel 1971: 63; Wallace 1986). For the valley of Acarí also a local style has been defined as contemporaneous to Nasca 2.
Just as in case of Nasca 1, the Nasca 2 evidences are most pronounced in the Nasca area, diminishing towards the North where more Initial Nasca traits are maintained contemporaneous to Nasca 2 and the Campana style. This pattern is confirmed by Proulx (2006: 33) who states that the vast majority with known valley provenience from his sample comes from Nasca.

Nasca 3
Nasca 3 pottery is present at Palpa in a great variety. The definition of Dawson's phase Nasca 3 corresponds in nearly all aspects to Early Nasca in Palpa. The unique difference is that in Early Nasca the few Nasca 2 fragments present have been included, because they mark the beginning of the polychrome Engobe tradition in Palpa.
The subdivision of Nasca 3/Early Nasca in four subphases A-D (Proulx 1968; 1970) can not be confirmed following the analysis of the Palpa materials. The general trend of shape development shown by Proulx is convincing, just the overly fine distinctions made are not applicable to fragmented pottery.

Nasca 3 pottery is known from all valleys from Ica to Acarí. There are burials as well as some evidences from settlement contexts. Some regional differences have been noticed (Proulx 1968), but the similarities are more striking.
The best known evidences from Ica are the Nasca burials excavated at Ocucaje by Max Uhle (Proulx 1970). These contexts are a clear proof of the Nasca 3 occupation in the Ica-valley. Through surface surveys in Ica many Early Nasca related settlement sites could be observed (Massey 1986; Menzel 1971). Rowe (1970: 428) remarks a sudden change in the pottery style in Ica with the appearance of Nasca 3, long interpreted as an indicator of military conquest. While the reason for this sudden appearance doubtful, all indicates a pronounced increase of polychrome Nasca pottery in Ica with the beginning of Nasca 3.

For Ingenio the survey data equally suggests a dense Nasca 3 population with the Ventilla-site as probable centre. There are no excavated contexts from this valley (Silverman 2002b). The largest settlement in the Nasca valleys is Cahuachi. There is a great amount of data available for this site. The architecture has been investigated through excavations by Strong (1957), Silverman (1986; 1993) and the Mision Italiana (Orefici/Drusini 2003). Further evidences are provided by burials that have been documented at many sites (Mejía 2002; Carmichael 1988; Kroeber/Collier 1998; Silverman 1993).
In Acarí there is principally one large Nasca 3 associated site, Tambo Viejo. The character of the Nasca 3 presence in this valley is still in discussion. A contemporaneous local style has been defined and the Nasca presence has been interpreted as restricted to one site (Valdez 2009).

C.3.3 Middle Nasca

Nasca 4

Diagnostic Nasca 4 pottery has been found in several Middle Nasca contexts in Palpa. There is a transitory context at PAP 78 that shows clearly the gradual transition from Early Nasca to Middle Nasca. Here, Nasca 4 material is found together with Nasca 3 and Nasca 5. The introduction of innovative Middle Nasca elements occurs rather fast so that Nasca 4 can not be assigned as an isolated phase in Palpa. It can be regarded as an early part of Middle Nasca. However, some conservative Nasca 4 traits persist until late in the Middle Nasca sequence (Plate 109: 5, 7). Dawson's interpretation of Nasca 4 as standing *stylistically* between Nasca 3 and Nasca 5 is correct, just, it does not reflect the *temporal* occurrence of this pottery. Nasca 4 and Nasca 5 do not stand in a linear sequence, but are in large parts contemporaneous. The data from Palpa indicates that in Middle Nasca the conservative Early Nasca related traits have been replaced only slowly by more innovative traits, causing a situation of a long lasting contemporaneity of Nasca 4 and Nasca 5 style. There is a tendency that mythical representations and trophy heads were more innovative than naturalistic and geometric designs.

Blagg (1975) already identified a conservative, a progressive and an innovative developmental line in Nasca style. Possibly this differentiation of conservative and progressive/innovative pottery can account for the explanation of a related phenomenon: the scarcity of Nasca 4 pottery in the Nasca area and its total absence in Cahuachi. In Ica the situation is reverse: only very few Nasca 5 pottery has been documented but the Nasca 4 component is well represented in the burials from Ocucaje and at the Santiago site (Proulx 1968).

The distribution of Nasca 4 pottery is somehow ambiguous. While the phase is well represented in some valleys in others it is merely absent in surface collections, leading some researchers to put into doubt the chronological validity of the phase (cf. Proulx 2006: 36, who argues in favor of maintaining the Nasca 4 definition). Possibly the solution to this problem can be found in the observance of regional differences:

In the Nasca area, the Early Nasca related building activities at Cahuachi stop after Nasca 3. No Nasca 4 pottery has been found at the site (Orefici/Drusini 2003; Silverman 1993). In other parts of the Nasca area, Nasca 4 pottery has been documented, but it is very scarce. Proulx (1968: Table 1) includes in his comparative study of Nasca 3 and Nasca 4 pottery from Ica and Nasca a total number of 8 Nasca 4 burials from the Nasca area. However, of these burials 3 are from Huayurí in the Santa Cruz valley (Neudecker 1979; Ubbelohde Doering 1958) that must be regarded as geographically more related to the Ica and Palpa valleys as to the Nasca heartland. Of the 5 remainder burials from the Nasca area 3 cannot be discussed here, because they are unpublished burials from a 1922 expedition by William Farabee (Carmichael 1988; Proulx 1968:7). Only two Nasca 4 burials from Nasca area are published and constitute so far the unique record of burials from this phase in Nasca. The burials are Ocongalla West A, Grave 6 and Majoro Chico A, Grave 17 (Kroeber/Collier 1998).

The design and shape traits featured by the corresponding vessels fit perfectly to the early Middle Nasca material from PAP 78 and La Muña, unit 8. It includes a vertical colored band ají, a frieze of diamonds, a bulbous vase with a fringed crescent design, some AMB depictions with flat forehead ornaments and multicolored necklaces, a Horrible Bird design, a frieze of vertical arranged straight fish, and similar slightly curved fish.
In Ica the Nasca 4 pottery also corresponds to Middle Nasca from Palpa: As compared to Nasca 4, relatively little Nasca 5 pottery has been found (Proulx 2006: 37). Considering the strong presence of Early Nasca and Late Nasca in that valley, this situation requires an explanation. Now, regarding the Nasca 4 pottery as a conservative and predominantly early component of Middle Nasca that, however, can be documented throughout the Middle Nasca sequence, this gap in Ica can be closed: The Nasca 4 pottery would represent the largest part of Middle Nasca in Ica. Possibly, at an advanced moment of Middle Nasca the Nasca 5 pottery might have been the dominant style, accounting for the small quantity of Nasca 5 found in that valley.
The pottery from the Ocucaje burials classed as Nasca 4 (Proulx 1968, 1970) also fits perfectly to the earlier part of the Middle Nasca sequence from Palpa. At the Santiago site some fragmented pottery attributable to Phase Nasca 4 has been recollected by Uhle (Proulx 1968). All examples fit into the Middle Nasca sequence from Palpa. Kroeber comments on the difference, apparently mainly of shape and attributes two of the Ocucaje burials to his Nazca X (Table 3). The Santiago materials are also regarded as Nasca X by Kroeber (1956: 332).
The Ubbelohde Doering burials can also be classed as Middle Nasca (Ubbelohde Doering 1958; Neudecker 1979). This is supported the data from the Puente Gentíl site in the Santa Cruz valley. Here some burials are documented that have been excavated by Mejia Xesspe and Tello in the 1920's that show an interesting mixture of Nasca 4 and Nasca 5 pottery (Isla 2001a).

This is no attempt to debate the classification of this material as Nasca 4. The argument here is that the material has to be regarded as Middle Nasca or contemporaneous with Nasca 5. It would not help to denominate the earlier part of Middle Nasca as Nasca 4: the style occurs mostly in association with Nasca 5. Only the later part of Nasca 5 widely lacks Nasca 4 designs and possibly then there appear the first Nasca 6 designs. But, apart from this, the contemporaneity of Nasca 4 in Ica and Nasca 5 in Nasca would not be adequately described when maintaining the Nasca 4 – Nasca 5 temporal distinction. Within this discussion, Palpa can be considered as intermediate between Nasca and Ica, north and south.

Another site that is interesting in this discussion is Marcaya, a rural Nasca site in the Tierras Blancas valley, within the Nasca area. According to the pottery association the site is dated to the Nasca 3/Nasca 4 transition and it is regarded an Early Nasca site. Again, this is no attempt to debate the pottery classification. Just, the materials presented as Nasca 3D and Nasca 4 correspond to the beginning of the Middle Nasca sequence in Palpa. In the light of the Palpa sequence, the Marcaya site would not be interpreted as an Early Nasca site. Based on the interpretation as Early Nasca, Kevin Vaughn (2000; 2005; 2009) relates the site to the ceremonial center at Cahuachi. He argues that the fineware pottery found at Marcaya would have been produced at

Cahuachi and distributed from there. However, the Early Nasca pottery associated to the central monumental sector of Cahuachi is stylistically clearly earlier than the pottery from Marcaya, and as the stratigraphies from Palpa proof, it is also stratigraphically earlier. A Nasca 3D to Nasca 4 component that would link Cahuachi temporally to Marcaya has so far not been documented at Cahuachi, but has to be searched for at a Middle Nasca site. At Cahuachi, the only Middle Nasca evidences known up to date are from burials.
Now, interpreting Marcaya as a Middle Nasca site, the corresponding center still needs to be identified. I agree with Vaughn in his interpretation of the pottery sample insofar as it is likely that the polychrome fineware would have been produced in centralized contexts and then distributed from the center to the periphery, within a socioeconomic system based on redistribution (Hecht 2004: 108). Within this interpretation it is convincing that the conservative pottery with simple geometric and plant designs prevails in the periphery and there in the poorer domestic contexts. On the contrary, the political centers and the high status households have access to a more elaborated and innovative pottery (Hecht 2004: 103, 108; Vaughn 2000: 508).

Resuming, there are many evidences that suggest 1) an increased frequency of Nasca 4 pottery as compared with Nasca 5 in Ica, and 2) a clear Middle Nasca association of all observed Nasca 4 pottery. Both aspects support an interpretation of Nasca 4 as an early and conservative variety of Middle Nasca pottery.

Nasca 5
The Nasca 5 pottery as defined by Dawson is completely attributable to Middle Nasca in Palpa. In Middle Nasca of Palpa the Nasca 5 component is by far stronger than the Nasca 4 component. However, not all traits defined for Nasca 5 are necessarily present in Palpa. The predilection for certain designs may be interpreted as a regional character of the style. However this topic requires an extra analysis based on an especially large database. The inventory of Nasca 5/Middle Nasca design themes and traits in Palpa is immense. All frequent traits are already known from other Nasca valleys, although often provenience information is lacking.

Also in the neighbored valleys Nasca 5 is well known from archaeological contexts. In Ica, Nasca 5 is said to be well represented in burials and surface collections (Menzel 1971: 65). However, Proulx (2006: 37) registers only 22 Nasca 5 vessels with valley provenience from Ica, compared to 405 vessels from Nasca. Of the vessels from Ica 15 come from the Santiago site, a Nasca 4 related site (Proulx 1968).

From Santa Cruz some burial contexts are known that show Nasca 5 pottery in association with Nasca 4 (Isla 2001a). Information about the settlements is not available.
In Ingenio a great amount of Nasca 5 sites have been identified in base of surface collection. No material has been published from survey or excavations (Silverman 2002b).
In the Nasca area, Nasca 5 has been documented in all valleys in surface collections (Schreiber/Lancho 1995; 2003). Burials are known from Cahuachi and other minor sites

(Kroeber/Collier 1998; Silverman 1993). In contrast to this amount of burial data, excavated evidences from settlements a scarce (Schreiber 1998: 265).
In Acarí there are no major evidences of a strong Nasca 5 presence. Moreover, the local pottery prevails (Valdez 2009).

C.3.4 Late Nasca

Nasca 6

The distribution of Nasca 6 pottery is archaeologically poorly known. There is a large corpus of Nasca 6 pottery in museum collections and the Nasca 6 mythical designs have been presented and depicted sufficiently to identify them (Proulx 2006; Roark 1965; Wegner 1976). Proulx (2006: 40) includes the impressive number of 768 Nasca 6 vessels in his sample, but gives no details upon valley provenience. Contrasting with this amount of known Nasca 6 pottery the information from documented excavations is particularly scarce.
In Palpa few Nasca 6 sites have been identified in the survey (Brown 1992). The Palpa Project surveys documented Nasca 6 with Nasca 7, but as can be seen from the original survey documentation, the Nasca 6 component is small. From excavation Nasca 6 is neither known. Some vessels from Nasca 5 burials exhibit a very progressive Nasca 5 style that might represent the division line to Nasca 6 (e.g. Hanaq Pacha burials 20, 21; Fux 2007). From settlements some isolated sherds may be phased as Nasca 6 (Plate 13: 2), but the context as a whole in these cases is dominated by Nasca 7 pottery.
Despite of the thorough but unpublished documentation of Nasca 6 there are some inconsistencies regarding the chronological placement of some designs. For example the trophy head designs from Parasmarca are Nasca 6 according to Wegner (1976: Plate 17-20) (Plates 51-52). However, in Palpa the associated designs like girl faces, star with eye, mythical figures are classed as Nasca 7. An example from a burial in Chaviña (Lothrop/Mahler 1957: Plate VII c) locates this trophy head in a clear Late Nasca context clearly considered as Nasca 7 (Lothrop/Mahler 1957, Carmichael 1988). The cursive trophy head is a characteristic design that has been identified as possibly being early Late Nasca. Wegner (1976) presents this variation of trophy head on his comparative tables within Nasca 6.

Of the few scientifically excavated Nasca 6 contexts all come from Nasca. These are principally those from Cahuachi (Strong 1957, see Carmichael 1988 and Silverman 1993). The pottery is unpublished. Two contexts are from Kroeber's excavations in Nasca.
In Ica the situation is similar to that in Palpa. Nasca 6 is merely absent; Menzel (1971: 66) mentions some vessels without known context as originating from the Ica valley.
From Santa Cruz no Nasca 6 pottery has been recorded so far.
In Ingenio Nasca 6 is restricted to one Sector of the Ventilla site and a few further records (Silverman 2002b: 129). The population decrease suggested by Silverman (2002b:171) as a possible reason for this underrepresentation of the style phase in her survey is not convincing regarding the situation in the other valleys.
From Acarí no Nasca 6 pottery has been published up to now.

Nasca 7

Phase Nasca 7 is one of the least known phases. This is due to the fact that no complete account on its characteristic features has been published, nor is any data from excavations available. However, the style does exist and is the epoch of the widest distribution of the Nasca Style.
In Ica a dense Nasca 7 population has been identified at the Pampa de la Tinguiña (Menzel 1971), details have been presented only in an unpublished manuscript that have not been available to me (Menzel 1957).
In Santa Cruz two of the burials excavated by Ubbelohde Doering (1958; Neudecker 1979) are Nasca 7.
In Palpa an increase in settlements has been observed in comparison to Middle Nasca (Soßna 2007).
In Ingenio Nasca 7 is supposed to be a time of drastic population decrease, as compared to phase 5. No excavations have been conduced. This situation is puzzling as compared to the frequency of Nasca 7 or Late Nasca pottery in all other valleys.
From the Nasca valleys there are relatively much Nasca 7 ceramics known both, burials (Mejía 2002, Kroeber and Collier 1998), and survey data (Schreiber/Lancho 2005). Nasca 7 settlements are still poorly investigated. The Estaquería and Huaca del Loro sites seem to have some Nasca 7 components (Strong 1957:32). In general Nasca 7 settlements are new foundations, Nasca 5 settlements are abandoned, a characteristic that is also observable in Palpa.
At Acarí there is a large Nasca 7-8 related site, Chaviña that remains uninvestigated except some fine Nasca 7 burials (Lothrop and Mahler 1957).
Apart from this there is some influence of Nasca 7 observable in the north up to Cañete and to the South (Silverman/Proulx 2002) and also in the Ayacucho Highlands.

C.3.5 Middle Horizon

Nasca 8
In Palpa settlement had been defined and some burials and in minor excavations settlement data have been documented as corresponding to the Nasca 8 or Loro style. Nasca 8 appears sometimes together with Chakipampa Style pottery (Nasca 9).
Nasca 8 or Loro Style pottery is also known from the other valleys.
In Nasca evidences are known as burial contexts. Ubbelohde Doering burial 1 from Cahuachi is the Nasca 8 type lot (Silverman 1993: 19). Also some settlement evidences from Huaca del Loro, the type site are known, Estaquería is said to have a Nasca 8 component, but here no digging had been done.
Menzel (1971) reports on Nasca 8 pottery in Ica. In Santa Cruz, at the Huayurí site Ubbelohde Doering excavated some Nasca 8 burials. Contrasting with this distribution in Ingenio settlement seems to continue its decrease (Silverman 2002). In Acarí no excavated evidences are available. Surface findings suggest a continued population of the large Chaviña site.

C.4 Conclusions: the relative sequence of Nasca pottery from Palpa

So far, in this study a regional corpus of Nasca pottery from Palpa has been presented.

This sample served to establish an independent pottery sequence for the Palpa area, entirely based upon stratigraphic analysis.
The settlement history in Palpa is best described using a four period scheme of Initial Nasca, Early Nasca, Middle Nasca, and Late Nasca (Table 31). This subdivision was applied before within the Palpa Project, but in the present study these periods have been concretely defined in terms of decoration and shapes present. The ^{14}C data available indicates that each period had a duration of 150 to 200 years. It is obvious that within each period some changes in the pottery style took place. These are reflected in the possible discrimination of earlier and later moments for all periods. But these changes are gradual and the categorization should be thoroughly checked in the individual case.
Possibly, the cultural development in the other valleys is better described by other models. Future investigations will have to reveal to what extent the results from Palpa are valid for the other valleys. The regional development in the other valleys has to be investigated independently. Only in a second step, regional results can be compared to the Palpa sequence. In any case, Dawson's 8 phase model is not suited to describing convincingly the situation in Palpa.

The Palpa Sequence of Nasca Pottery	
Settlement Periods	**Subperiods**
Loro	**Loro**
Late Nasca	**Late Nasca**
undefined transition	
Middle Nasca	**Middle Nasca 2**
	Middle Nasca 1
Early Nasca	**Early Nasca 2**
	Early Nasca
undefined transition	
Initial Nasca	**Initial Nasca**
undefined transition	
	Late Paracas

Table 31: The relative sequence of Nasca pottery in Palpa

During the **Initial Nasca** period Palpa formed part of a pottery tradition related to the northern Topará style from the Chincha and Pisco area (Wallace 1986). The same influence is clearly seen in the Ica valley that is closer to the supposed center of this

style, but it even reaches further south to the valleys of Nasca as can be seen in the pottery types defined by Strong (1957). At some point of time within the Initial Nasca period, this southern Nasca region developed to become a center of innovation where the polychrome tradition emerged and culminated in the Nasca style. However, the early development of this style as defined by Dawson's phases Nasca 1 and Nasca 2 is principally a regional phenomenon restricted to the Nasca area. Toward the north isolated examples of this polychrome tradition occur, probably in high status contexts, but the main component pottery style found is that of northern Topará style influence. This explains the scarcity of polychrome incised Initial Nasca pottery in Palpa and Ica (Massey 1992).
The transitory phase between Initial Nasca and Early Nasca is particularly short or virtually absent in Palpa. Stratigraphic proof and a definition based on a representative sample are still lacking for the Palpa area and will be left to future investigations. The character of this transitory phase can be estimated by observing the data from the upper Ica valley. Massey (1992) observes a co-occurrence of Topará influenced Initial Nasca pottery, with polychrome Nasca 2 pottery and local adaptations of Nasca 2 pottery in the Campana style. The same situation was described by (Sawyer 1966: 96):

> "In 1960 I conducted a stratigraphic cut in habitation refuse at a Paracas site on the Hacienda Cordero Alto in the upper Ica Valley just below Cerillos. The excavation confirmed what Dr. Strong had found at Cahuachi – that the time range of stylistic types overlapped, and the assignment of a period designation to any given level was a matter of percentage. The transition from Late Paracas to Proto-Nazca and finally Early Nazca was smooth and gradual without any abrupt change. […] The point I wish to make here is that the coexistence of diverse styles in the Late Paracas and Proto-Nazca Periods makes exact chronological ordering all but impossible."

According to this, the spread of polychrome Nasca pottery has been slow at the beginning. The style can be interpreted as contemporaneous to the later part of Initial Nasca and to the earliest moments of Early Nasca in Palpa.

Obviously, a major change occurred in the Palpa valley with the new foundation of several **Early Nasca** centers (Reindel/Isla/Koschmieder 1999; Soßna 2007). One of these centers is Los Molinos. It is the only site from this period in Palpa that was investigated by excavations and therefore serves as an example for this period. The beginning of this site coincides stylistically with the beginning of the Nasca 3 style. In fact, the Nasca 3 phase definition fits in perfectly with the definition of Early Nasca in Palpa. The terminological difference is due to the fact that there is no true Nasca 2 phase in Palpa. In terms of settlement activity in Nasca, Early Nasca follows directly after Initial Nasca. In order to define of the short transitory phase it has to be shown if Nasca 2 pottery is more an Initial Nasca phenomenon or if it is already attributable to the first moments of Early Nasca.
The earliest evidence from Los Molinos corresponds widely with the pottery identified as earliest Nasca 3 in Nasca as well (cf. Proulx 1968: Appendix 4). There are even some Nasca 2 fragments mixed with the Nasca 3 pottery in the earliest layer from Los Molinos, emphasizing the early character of the associated Nasca 3 pottery. It seems that the stylistic transition had taken place in the Nasca area, where the polychrome tradition seems to have its origin. The stylistic development of Nasca 3 style must have been fast as observable in the increased variability in iconography. It spread from Nasca

to the north, to Palpa where it is associated with the new construction of large scale adobe architecture at Los Molinos and other sites (Soßna 2007). While the first evidence of this style – Nasca 1 and Nasca 2 style pottery – arrived only slowly and isolatedly in Palpa and Ica, then there was a moment of exploding stylistic variety and a simultaneous spread of the style over a large area up to Ica and also southward to Acarí. This stylistic expansion is paralleled by enormous building activity at Cahuachi (Silverman 1993), suggesting a function for the site as religious and possibly political center of the Early Nasca period.

There is only little evidence that supports a stylistic subdivision of Early Nasca pottery in Palpa. It seems that a later part of Early Nasca can be characterized by the first occurrences of later Middle Nasca traits in Early Nasca contexts. Also, the stylistic variability characteristic for the lower layers of the stratigraphies at Los Molinos is not paralleled in the upper layers. Possibly this is an indication of a prolonged decline of Early Nasca culture rather than an abrupt end.

However, the transition from Early Nasca to **Middle Nasca** in Palpa is archaeologically best reflected by a drastic settlement shift. This shift is paralleled by the abandonment of the central sector of Cahuachi in Nasca and the end of monumental building activities at that site.

The stylistic change to Middle Nasca can be best observed in the stratigraphies at PAP 78. Here, the stylistic change is gradual but noticeable. Some new themes and shapes that become characteristic for Middle Nasca in Palpa already occur in Early Nasca, but as unique or rare specimens. The design themes continue with slight stylistic changes, especially in the color scheme and the size of designs. At the beginning of Middle Nasca, as it is definable from the stratigraphies at PAP 78, the iconographic variability initially decreases. But soon after, Middle Nasca innovations occur. The characterization of this material resembles in many aspects the definition of Nasca 4 (Blagg 1975; Proulx 1968). However, there are two principal reasons for including Nasca 4 pottery within Middle Nasca: The stratigraphic distribution of the earliest Middle Nasca traits that could be defined indicates that some of them are present throughout the Middle Nasca period and occur together with later introduced traits. Additionally, some traits originally defined as Nasca 5, have an early appearance within the Middle Nasca sequence. There is more an increased variability than a change in the pottery style. A further argument for the new terminology is the settlement shift at the beginning of the Middle Nasca period, while within this period apparently no more major settlement shifts occur.

The Middle Nasca period can be tentatively divided into an earlier part, that marks the transition from Early Nasca and a slow increase of iconographic variability, and a later part characterized by the introduction of more innovative stylistically clearly different design traits. These include the Bizarre Innovations and the Progressive Monumental style as defined by Blagg (1975), but the Palpa stratigraphies indicate that these innovations are paralleled by the introduction of many other traits that belong to the Monumental style. There are significant changes in the depiction of many iconographic themes, like e.g. AMB, trophy heads, fish, or birds, and also in the general design canon. Many designs become smaller; they may be arranged in several panels, and there is a marked stylization and reduction in geometric shapes of the formerly naturalistic designs.

The transition to **Late Nasca** remains widely undefined based on the evidence from Palpa. But, the excavated evidence from other valleys is equally scarce. As a consequence, the transition from Middle Nasca to Late Nasca has to be defined as an undefined transitory phase rather that paralleling it with Dawson's Nasca 6. The term Nasca 6 implies a concrete inventory of decorations and shapes. However, it is unclear to what degree this phase definition characterizes the hypothetic transitory materials.
Late Nasca pottery is well represented in Palpa with the findings from Parasmarca. However, the inventory of design documented does not account for the complete variability of Nasca 7 designs as defined (A.5.2.7). Especially the full bodied figures, mythical figures as well as running warriors are not present in the Palpa sample. The existing chronological gap between Middle Nasca and Late Nasca reflected in the ^{14}C ages (see C.2) will have to be filled in future studies with material that marks this transition. Only then can it be decided if the lack of certain designs in Palpa is due to regional differences or if rather it is an indicator of sample bias. Future studies also have to reveal if the transitory phase can be regarded as an additional settlement period or if it is a transitory phase of rapid stylistic change. In any case it is a temporally short phase that can be expected to integrate material formerly defined as Nasca 6 and Nasca 7.

Zusammenfassung

Fragestellung

Die Nasca-Kultur (ca. 150 v. Chr. – 650 n. Chr.) wurde auf der Grundlage eines einheitlichen Keramikstils definiert (Uhle 1914), der hauptsächlich in den Tälern des Río Grande de Nasca Beckens und im nördlich angrenzenden Ica Tals gefunden wurde (Map 1). Die Einflüsse des Stils reichen allerdings in seiner weitesten Verbreitung bis nach Chincha im Norden, Arequipa im Süden und in das angrenzende Hochland von Ayacucho (Silverman/Proulx 2002).

Die vorliegende Untersuchung ist ein Beitrag zum Verständnis der Nasca-Keramikchronologie aus einer regionalen Perspektive. Das Hauptziel der Arbeit ist die Definition einer relativen Sequenz der Nasca-Keramik für die Palpa Region. Die Grundlage hierzu bietet die Beschreibung, Klassifikation und stratigraphische Analyse eines repräsentativen Korpus von ca. 5000 Nasca-Keramikfragmenten aus fünf verschieden Siedlungen der Nasca-Kultur in der Palpa Region.

Die Keramik stammt aus den zwischen 1997 und 2006 in den Tälern des Río Grande, Río Palpa und Rio Viscas durchgeführten Untersuchungen (Maps 1, 2) durch das Archäologische Projekt Palpa, unter Leitung von Markus Reindel (Deutsches Archäologisches Institut, Kommission für Archäologie Außereuropäischer Kulturen) und Johny Isla (Instituto Andino de Estudios Arqueológicos) (Reindel/Wagner 2009).
Die Ergebnisse dieser Studie werden im Kontext weiterer Untersuchungen zur Nasca-Keramik aus den benachbarten Tälern diskutiert (Proulx 1968, Silverman 1993; Silverman/Proulx 2002; Vaughn 2000).

Seit Beginn der Nasca-Forschung 1901 durch Max Uhle hat es verschiedene Ansätze zur chronologischen Ordnung der Nasca-Keramik gegeben (u. a. Gayton/Kroeber 1927; Kroeber/Collier 1998; Strong 1957; Proulx 1968; Roark 1965; Rowe 1960, 1961). Die vorliegende Untersuchung ergab sich aus einigen Unstimmigkeiten die sich in der Anwendung des herkömmlichen Chronologieschemas auf die Keramik aus Palpa zeigten:

Als Standard-Chronologieschema hatte sich in der Nasca-Archäologie in der Vergangenheit die sogenannte *Dawson Sequenz* durchgesetzt. Lawrence Dawson erarbeitete in den 1950er Jahren in Berkeley eine neun Phasen (Nasca 1-9) umfassende Stilsequenz. Die zugrundeliegende Methode ist eine Ähnlichkeitsseriation der Verzierungen und der Formen. In einem zweiten Schritt wurden Grabkontexte als geschlossene Funde und zu einem sehr geringen Anteil auch stratigraphische Informationen aus Siedlungen hinzugezogen (Rowe 1961; Proulx 2006: 27-29). Die Dawson Sequenz gilt als eine sehr detaillierte Chronologie. Jedoch zeigten sich wiederholt Unstimmigkeiten in der konkreten Anwendung auf Grabungsbefunde und Oberflächensammlungen und die Notwendigkeit einer Revision des Schemas wurde deutlich, sowohl im Palpa Projekt, als auch bereits in früheren Untersuchungen (Hecht 2009; Orefici/Drusini 2003; Proulx 2006; Reindel et al. in press; Silverman 1993; Silverman/Proulx 2002).

Es sind im Wesentlichen drei Faktoren die eine Neubetrachtung der Nasca Chronologie erfordern:

1) Einheitlich lineare Sequenz oder stilistische Heterogenität?

Die Nasca Sequenz ist als lineare Sequenz konzipiert worden, gültig für alle Täler des Verbreitungsgebiets dieses Stils. Die Sequenz wurde auf Grundlage von Keramik aus Nasca und Ica erstellt und regionale Unterschiede wurden per definitionem ausgeschlossen (Rowe 1960). Jedoch sind in archäologischen Untersuchungen die Phasen Nasca 2, Nasca 4 und Nasca 6 oft unterrepräsentiert. Dies könnte ein Indiz für das Vorhandensein regionaler Unterschiede sein. Ein starker Bevölkerungsrückgang in den schwächer repräsentierten Phasen (Browne 1992; Silverman 2002b) ist dagegen als Erklärung weniger plausibel, da dies starke kurzfristige Schwankungen in der Bevölkerungszahl gegenüber den Phasen Nasca 3, Nasca 5 und Nasca 7 bedeuten würde. Siedlungen und ^{14}C Daten lassen eher auf eine gleichmäßige Besiedlung der Region schließen. Regionale Unterschiede könnten aber die Seltenheit von Keramik einiger Stilphasen in einigen der Täler gut erklären.

Es ist anhand einer regional einheitlichen Datengrundlage zu überprüfen, wie sich die Sequenz für einen begrenzten Raum darstellt. Ausgehend von der Situation in Palpa muss die regionale Datengrundlage für jede einzelne der Dawson Phasen in den anderen Tälern nachvollzogen werden, um so die postulierte Einheitlichkeit des Stils zu testen.

2) Stilsequenz und stratigraphische Überlagerung

Die Dawson Sequenz basiert auf einer Stilseriation von Form- und Verzierungsmerkmalen und auf der Objektassoziation in Grabkontexten. Stratigraphien aus Siedlungsbefunden konnten hingegen kaum berücksichtigt werden, da nur wenige entsprechende Daten in den 1950er Jahren vorhanden waren. Es ist zu überprüfen, inwieweit das Argument der stratigraphischen Überlagerung von Funden in Siedlungsgrabungen andere Ergebnisse erbringt als Stilseriation und geschlossener Fund. Im Falle von Unterschieden in den Ergebnissen ist eine Sequenz aus Siedlungsdaten sicherlich besser zur Anwendung auf Siedlungen und damit auf einen Großteil der archäologischen Praxis geeignet.

3) Fragmentarische Vorlage der Sequenz

Ein dritter guter Grund für die Vorlage der Daten aus Palpa ist die schlechte Publikationslage der Dawson Sequenz. Dawson selbst veröffentlichte die Ergebnisse seiner Seriation nicht. Spätere Detailstudien anderer Autoren behandeln jeweils nur einzelne Phasen oder Bildthemen (Roark 1965; Proulx 1968, 1994; Silverman 1977; Wolfe 1981) und einige Arbeiten zirkulieren nur als unveröffentlichtes Manuskript (Blagg 1975; Menzel 1957; Wegner 1975, 1976). Dies macht die Sequenz schwer nachvollziehbar und gerade die geometrischen und naturalistischen Bildthemen müssen für Teile der Sequenz als weitgehend unveröffentlicht gelten.

Die Daten aus Palpa ermöglichen erstmals eine unabhängige Überprüfung der Dawson Sequenz auf Grundlage eines regional einheitlichen Korpus welches komplett aus archäologisch dokumentierten Kontexten stammt.

Die Ziele der Arbeit sind:

- Die Präsentation eines regionalen Korpus von Nasca Keramik (Formen, Verzierungen und Warenarten), basierend auf ca. 5000 diagnostischen Fragmenten von fünf Fundorten
- Die Erstellung einer unabhängigen Keramiksequenz auf Grundlage von stratigraphischen Befunden aus Siedlungsgrabungen
- Die Überprüfung der Gültigkeit der Dawsonsequenz für die Palpa-Region durch einen Vergleich mit der neuen Palpa-Sequenz
- Die Definition der Übereinstimmungen und Unterschiede von Palpa-Sequenz und Dawson-Sequenz
- Die Definition der Erfordernisse für weitere Studien zur Nasca Keramik aus anderen Tälern

Das Ergebnis der vorliegenden Untersuchung wird eine regionale Sequenz der Nasca Keramik aus Palpa sein. Dies ist zugleich die erste komplette Sequenz der Nasca Keramik die ausschließlich auf der Keramik aus einem regional eng umgrenzten Raum basiert.

Dieser regionale Fokus hat einen bedeutenden Einfluss auf die sozio-politische Interpretation der Nasca-Kultur. In der Vergangenheit wurde in der Interpretation der Nasca-Kultur und des Nasca-Keramikstils vor allem die kulturelle Einheitlichkeit betont. Als Folge hieraus erschien die Nasca Kultur als kulturell homogene Einheit die leicht von anderen zeitgleichen Kulturen unterschieden werden konnte. Aber, die kulturellen und sozio-politischen Entwicklungen und wechselseitigen Abhängigkeiten innerhalb dieser mehrere Täler umfassenden Kultur sind nach wie vor unbekannt. Die regionale Perspektive wurde weitgehend vernachlässigt, mit Ausnahme der Studien durch Proulx (1968) und Blagg (1975). Das Resultat ist ein verzerrtes Bild: Die bestehende Keramiksequenz, die regional undifferenziert ist, ist nicht geeignet, regionale Besonderheiten offen zu legen. Stattdessen wird eine möglicherweise falsche Homogenität des Stils vorgetäuscht: Die Stilphasen wurden auf der Grundlage von Keramik aus allen Tälern definiert und folglich sind in jedem der Täler irgendwelche Elemente aus jeder der Phasen vorhanden.
Dagegen könnte die Anerkennung regionaler Sequenzen und eine Kartierung der geographischen Verteilung der Form und Verzierungsmerkmale dazu beitragen, regionale Unterschiede zu definieren. Ein regional differenzierteres Bild wäre zugleich ein dynamischeres Bild der kulturgeschichtlichen Entwicklung, das die Rekonstruktion der Stilentwicklung und der wechselseitigen Einflüsse zwischen den Tälern ermöglichen würde. Die Dokumentation einer regionalen Sequenz für Palpa ist ein erster Schritt in diese Richtung.

Vorgehensweise

In **Teil A** der Arbeit wird die Forschungsgeschichte zur Nasca-Keramik vorgestellt. Viele der Ansätze sind nur noch forschungsgeschichtlich von Interesse, prägen aber das allgemeine Verständnis des Nasca-Stils. Von besonderer Bedeutung ist der Ansatz von Lawrence Dawson, da er das bisher gängige Chronologieschema bereitstellt. Der Ansatz wird ausführlich in seiner Methodik gezeigt und die Definition der einzelnen Phasen wird kurz skizziert. Des Weiteren sind vor allem die Arbeiten von Helaine Silverman

(1993) in Cahuachi und Kevin Vaughn (2000) in Marcaya von Interesse, da sie Beispiele für den Umgang mit fragmentierter Keramik bieten.

In **Teil B** wird die Nasca Keramik aus Palpa systematisch vorgestellt.
Für die **Formenklassifikation** ergibt sich das Problem, dass frühere Klassifikationen auf ganzen Gefäßen basierten. Die Gefäßproportionen sind dabei ein übergeordnetes Kriterium. Die Keramik aus Siedlungsgrabungen ist aber in der Regel zerscherbt und die Gefäßhöhe welche neben dem Mündungsdurchmesser das wichtigste Kriterium für die Proportionen bildet ist somit nur ausnahmsweise erhalten.
Der Ansatz der vorliegenden Arbeit sieht eine Klassifikation in drei Schritten vor. Zunächst werden Gefäße mit Hals und Gefäße ohne Hals unterschieden. Im zweiten Schritt wird nach Orientierung (eingezogen, steil, ausladend) und Form (konvex, gerade, konkav) des Randfragments klassifiziert. In einem dritten Schritt werden Unterkategorien dieser Fragment-Formenkategorien bestimmt. Die Kriterien hierzu sind Mündungsdurchmesser, Randform und –stellung, Wandungshöhe im Verhältnis zum Durchmesser, sowie die Bodenform. Die Ergebnisse der Klassifikation werden in Kapitel B.5.1 und auf den Tafeln I.1-53 und II.1-11 vorgelegt.

Die **Verzierungsklassifikation** beruht auf der Taxonomie (Rowe 1960) und Terminologie (Proulx 2006) der Dawson Klassifikation. Die Taxonomie sieht eine Beschreibung der Ikonographie auf verschiedenen Ebenen vor. Die oberste Ebene der Klassifikation ist das ikonographische Thema (*theme*). Ein Thema ist ein interpretierbares Bild. Als Themenkategorien lassen sich in der Nasca Ikonograpie mythische Themen, naturalistische Themen und geometrische Themen unterscheiden; innerhalb dieser Kategorien sind viele weitere Feinunterscheidungen möglich.
Ein Bildthema setzt sich in der Regel aus verschiedenen Komponenten (*component*) zusammen. Diese sind auch interpretierbare Einheiten, die aber meistens als Bestandteil eines Themas gezeigt werden. Beispielsweise setzt sich das Thema „Fuchs“ aus den Komponenten „Mund“, „Zähne“, „Schnurhaare“, „Auge“, „Ohr“, „Körper“, „Schwanz“, „Beine“, und „Pfoten“ zusammen. Die kleinste ikonographische Einheit ist das ikonographische Feature (*feature*). Ein Feature ist meist eine nähere Beschreibung der Ausgestaltung einer Komponente in Farbe und Form.

Bei der Klassifikation der Formen und Verzierungen und ihrer Vorlage wurde in einem zweiten Klassifikationsschritt, bei der Definition von Unterkategorien, bereits die Horizontalstratigraphie berücksichtigt. Jeder der Besiedlungsperioden die für die Palpa Gegend definiert werden konnten kann ein Fundport zugewiesen werden. Das Material an diesem Fundort stammt in der Hauptsache aus der entsprechenden Periode.

Die **Analyse der Waren** wurde makroskopisch während der Dokumentation der Keramik unternommen. Ein verringertes Korpus von 27 Scherben aus fünf Zeitstufen (Initial Nasca, Früh Nasca, Mittel Nasca, Spät Nasca und Loro) wurde an der Ruhr Universität/Bergbaumuseum Bochum mittels Dünnschliff, Röntgendiffraktometrie und ICP-OES untersucht. Beide Untersuchungen ergaben keine Warenunterschiede, bis auf eine Unterscheidung von Feinkeramik, ohne oder mit wenig sichtbarer Magerung, und Grobkeramik, mit deutlich sichtbaren größeren Magerungspartikeln.

In **Teil C** wird die Keramik von Palpa in verschiedenen Aspekten diskutiert.
Zuerst wird die vertikale Stratigraphie betrachtet. Daraufhin werden die vorhandenen ^{14}C Datierungen in die Diskussion einbezogen. Abschließend erfolgt eine Diskussion der Palpa Sequenz im Lichte der Dawson-Sequenz.

Band 2 dieser Arbeit beinhaltet die Abbildungstafeln der Formen und Verzierungen sowie verschiedene Anhänge, mit Fundortbeschreibungen; schematischen Darstellungen der Stratigraphie (Harris Matrix); Kombinationstabellen für die stratigraphische Auswertung; den Ergebnissen der Röntgendiffraktometrie Untersuchung zur Warenbestimmung; und einer Daten DVD mit einer Datenbank für Formen und Verzierungen und einem Ordner mit Photos aller Scherben.

Ergebnisse

Die Analyse der Horizontalstratigraphie, also der Verteilung der Merkmale zwischen den in dieser Studie diskutierten Fundorten ergibt eine klare Definition von 4 Siedlungsperioden:
Die **Initial-Nasca Zeit** ist durch die Funde aus Estaquería repräsentiert. Die Periode lässt sich in Form und Verzierung deutlich von späteren Nasca Perioden abgrenzen.
Die **Früh-Nasca Zeit** ist durch die Funde aus Los Molinos repräsentiert. Die Abgrenzung gegenüber Initial Nasca ist eindeutig. Gegenüber Mittel Nasca gibt es eine teilweise Kontinuität von Formen und ikonographischen Themen. Durch den Vergleich mit den Mittel Nasca Funden aus La Muña und PAP 78 lassen sich allerdings bei den Verzierungen auf der Feature Ebene eindeutige Unterscheidungsmerkmale definieren. Bei den Formen ist die Unterscheidung nicht so deutlich. Es gibt Entwicklungstrends, z.B. zu stärker ausladenden Gefäßwänden und einer größeren Wandungshöhe bei Schalen, jedoch lassen sich diese Unterschiede eher statistisch, im Vergleich des gesamten Korpus, ablesen. Bauchige Vasen treten häufig auf; aus Früh Nasca sind allerdings einige wenige Vorläufer bekannt, die sich morphologisch kaum unterscheiden. Die chronologische Einteilung eines Gefäßfragments einzig aufgrund der Form ist nicht eindeutig.
Einige Funde aus den oberen Schichten von Los Molinos lassen sich der Mittel Nasca Zeit zuordnen. Dies wird im Vergleich zu anderen Mittel Nasca Funden deutlich.
Die **Mittel-Nasca Zeit** ist anhand der Funde von La Muña und PAP 78 definiert worden. Neben den Verzierungsmerkmalen, die sich auf Früh-Nasca zurückführen lassen gibt es andere innovative Verzierungselemente die klar auf Mittel-Nasca begrenzt sind und damit eine gute Definitionsgrundlage für diese Siedlungsperiode bieten.
Die **Spät-Nasca Zeit** konnte anhand der Funde aus Parasmarca definiert werden. Die Verzierungen sind deutlich unterschiedlich gegenüber dem Mittel-Nasca Material. In den Formen setzt sich der Trend zu stärker ausladenden Gefäßen fort. Spät-Nasca Vasen sind tendenziell schlanker und höher als die Mittel-Nasca Vorläufer. Allerdings ist auch hier von einer größeren Kontinuität der Formen auszugehen.

In den Siedlungen, die wie beschrieben den jeweiligen Siedlungsperioden zugeordnet werden können, wurden mehrere Grabungsschnitte angelegt. Für die Befunde in diesen Schnitten konnten stratigraphische Überlagerungen dokumentiert werden. Durch die

Analyse dieser vertikalen Stratigraphie können weitere zeitliche Unterschiede innerhalb einer Siedlungsperiode untersucht werden.

Die Analyse der vertikalen Stratigraphie ergab Möglichkeiten zur weiteren chronologischen Feinuntergliederung von Früh-Nasca und Mittel-Nasca. Für Initial-Nasca und Spät-Nasca zeichnete sich dagegen keine Möglichkeit der weiteren Unterteilung ab, möglicherweise da das Korpus nicht die gesamte Periode abdeckt.
In Früh-Nasca sind die Anzeichen für eine Unterteilung nicht sehr deutlich. Bereits im unteren Bereich der Stratigraphien ist eine große Menge an ikonographischen Themen zu vermerken. Das Inventar ändert sich kaum merklich innerhalb der Früh-Nasca Zeit. Einziges Unterscheidungsmerkmal, wie es sich in Palpa zeigt, ist das spätere vereinzelte Einsetzen von Merkmalen die in Mittel-Nasca häufig vorkommen. Die Untersuchung zeigt eine Tendenz auf, die in weiteren Studien vertieft betrachtet werden kann.
Für Mittel-Nasca ist eine deutlichere Unterscheidung von zwei Phasen möglich. Der Beginn der Mittel-Nasca Periode ist durch eine klare Kontinuität von Früh-Nasca Themen gekennzeichnet. Die Ausgestaltung der Themen ist durch leichte Veränderungen auf der Feature Ebene von den Früh-Nasca Vorläufern zu unterscheiden. Die Vertikale Stratigraphie zeigt, dass erst später in Mittel-Nasca eine Reihe von Innovationen auftritt. Hierbei handelt es sich um wesentlich veränderte Themen oder um neue Themen.
Die Spät-Nasca Keramik erscheint auch in der vertikalen Stratigraphie als homogener Block. Das vermehrte Vorkommen von Trophäenköpfen und Ganzkörperdarstellungen bei mythischen Figuren deutet auf einen früheren Moment von Spät-Nasca hin, der in den Materialien vom Fundort Parasmarca nicht repräsentiert ist.

Die gesamte Nasca-Zeit ist durch ^{14}C Daten aus Palpa abgedeckt. Die Siedlungsperioden können zeitlich sehr genau gefasst werden (Unkel/Kromer 2009; Unkel et al. 2008) (Table 29). Die stilistisch nicht näher definierten Übergänge zwischen Initial Nasca und Früh Nasca sowie Mittel Nasca und Spät Nasca finden sich im Fehlen von ^{14}C Datierungen für diese Zeiträume reflektiert. In dieser Arbeit werden 21 ^{14}C Daten aus Palpa diskutiert, die in direktem Zusammenhang mit den für die Analyse ausgewählten Grabungsbefunden stehen. Es ergeben sich zwei Übergangsphasen, die in Palpa stilistisch bisher noch nicht näher definiert werden konnten. Die Übergangsphase zwischen Initial-Nasca und Früh-Nasca ist stilistisch weder in den obersten Schichten von Estaquería, noch in den untersten Schichten von Los Molinos zu definieren. es ist zu vermuten, dass das Material ungefähr der Phase Nasca 2 in der Dawson Sequenz entspricht. Es ist aber zu betonen, dass das Material noch undefiniert ist und eine Gleichsetzung mit Nasca 2 hypothetisch ist.
Ähnlich ist die Situation beim Übergang von Mittel-Nasca zu Spät-Nasca. Auch hier deuten die ^{14}C Datierungen eine Lücke von ca. 50-100 Jahren an die sich stilistisch ebenso zeigt. Es ist von einer kurzen Übergangsphase auszugehen in welcher sich der Wandel von Mittel-Nasca zu Spät-Nasca abzeichnet, entweder durch graduellen Wandel oder aber durch die Einführung der charakteristischen Spät-Nasca Merkmale.
Das Material, das diesen Übergang charakterisiert, ist für Palpa noch undefiniert. Möglicherweise ist diese Phase ähnlich dem von Dawson definierten Nasca 6. Der Unterschied der Palpa Sequenz zur Dawson Sequenz ist, dass die genaue Definition der Phase für Palpa offen bleibt und nicht deckungsgleich mit Nasca 6 sein muss. Es ist gut

möglich, dass einige Nasca 6 Elemente vorhanden sind, während andere Merkmale möglicherweise in anderen Tälern auftreten oder eher Mittel-Nasca oder Spät-Nasca zuzuordnen sind.

In der abschließenden Diskussion wird das Vorhandensein der Dawson Phasen in Palpa und in anderen Tälern betrachtet. Keramik, die stilistisch Nasca 1 entspricht, wurde in Palpa gefunden. Es gibt jedoch eine Einschränkung: Keramik mit mehrfarbiger Engobe und Ritzverzierung, die nach Dawsons Definition den Übergang vom Ocucaje Stil zum Nasca Stil markiert wurde in Palpa nur äußerst selten in vereinzelten Fragmenten dokumentiert und ist im Korpus der Arbeit nicht vertreten. Dagegen sind charakteristische Formen und Verzierungstechniken die von William Strong (1957) in Cahuachi als zeitgleich identifiziert wurden in Palpa durchaus vorhanden: niedrige Schalen mit eingezogenem Rand und tiefem Rundboden; reduzierend gebrannte Keramik, teilweise mit Politurmustern; negativ Dekor; sowie polierte Oberflächen mit Naturengobe. Diese Merkmale lassen sich in Palpa der Initial Nasca Zeit zuordnen.
Die Verbreitung der Nasca 1 Keramik, bzw. der Initial Nasca Keramik zeigt, dass in Nasca, die größte Konzentration der Ritzverzierten mit Engobe bemalten Keramik zu finden ist. Im Zusammenhang mit dem Beginn der monumentalen Bautätigkeit in Cahuachi, das zum größten Zentrum der gesamten Nasca Region wird, lässt sich hier die Entstehung des Nasca Stils verorten. Die Initial Nasca Keramik aus Palpa ist dagegen eher dem Topará Stil ähnlich, einer aus der nördlich gelegenen Gegend um Chincha und Cañete stammenden Keramiktradition (Wallace 1986). Der gleiche Einfluss ist im Ica Tal zu beobachten, das noch näher am vermuteten Zentrum des Stils liegt, und auch südlich, in Nasca wurde vergleichbare Keramik dokumentiert (Strong 1957). Zu einem unbestimmten Zeitpunkt innerhalb der Initial Nasca Zeit wurde die südliche Nasca Region das innovative Zentrum wo der durch mehrfarbige Engobebemalung gekennzeichnete Nasca Stil entstand. Jedoch ist zu Beginn seiner Entwicklung der Nasca Stil noch ein weitgehend regionales Phänomen welches auf die Nasca Gegend begrenzt ist. In den weiter nördlich gelegenen Tälern ist die monochrome Keramik mit Topará Einfluss die weit häufigere Komponente; ritzverzierte Keramik mit mehrfarbiger Engobebemalung ist in Palpa und Ica äußerst selten.
Die Übergangsphase von Initial-Nasca zu Früh-Nasca ist in Palpa besonders kurz oder nahezu nicht vorhanden. Ein stratigraphischer Nachweis dieses Übergangs fehlt noch und muss durch weitere Ausgrabungen erbracht werden. Es ist davon auszugehen, dass das Material dieser Übergangsphase in Teilen eine direkte Weiterentwicklung der lokalen Initial-Nasca Keramik ist. Zusätzlich ist zu vermuten, dass einige Merkmale der als Nasca 2 definierten Keramik in diese Übergangsphase fallen. Dies wird durch den Fund weniger dieser Merkmale in der ältesten Schicht von Los Molinos bestätigt. Es scheint, dass das innovative Zentrum im Übergang zu Früh-Nasca weiterhin das südliche Nasca gebiet um das Zentrum Cahuachi ist.
Das Formen und Verzierungsspektrum der Früh Nasca Keramik aus Palpa ist weitgehend deckungsgleich mit Dawsons Nasca 3 Definition. Die Änderung in der Terminologie von Nasca 3 zu Früh Nasca ergibt sich zum einen aus dem schwachen Vorkommen von Nasca 2 und Nasca 4 in Palpa, zum anderen weil einige Nasca 2 Elemente durchaus der Früh-Nasca Periode zugeordnet werden müssen, denn sie treten in Los Molinos zwar in den frühesten Kontexten aber mit Früh-Nasca Keramik gemeinsam auf.

Eine Feinuntergliederung der Früh-Nasca Periode ist derzeit aufgrund der Daten aus Palpa nicht haltbar. Es zeichnet sich lediglich ein Trend ab, dass einige Elemente die in Mittel-Nasca häufig sind im Verlauf von Früh-Nasca eingeführt werden. Andererseits scheinen die früh vorhandenen Elemente bis zum Ende vorzukommen. Möglicherweise kann auf Grundlage einer größeren Datenlage die Feinunterteilung genauer definiert werden.
Mit Beginn der Früh-Nasca Zeit ist der Nasca Stil in Palpa in einer großen Variabilität vertreten. Die stilistische Entwicklung innerhalb der Früh-Nasca Periode ist schnell. In diese Zeit fällte die Neugründung größerer Siedlungszentren, wie z.B. Los Molinos (Reindel/Isla/Koschmieder 1999; Soßna 2007). Während die Verbreitung von Nasca 1 und Nasca 2 Keramik eher langsam verlief zeigt sich die Verbreitung von Früh-Nasca/Nasca 3 explosionsartig. Parallel dazu ist in Cahuachi das weiterhin das größte Zentrum dieser Zeit bleibt eine monumentale Bautätigkeit (Silverman 1993). Die Einheitlichkeit des Stils und sein Ursprung in Nasca machen eine Verbreitung von dort aus wahrscheinlich. Cahuachi war sicherlich das wichtigste religiöse und möglicherweise politische Zentrum dieser Zeit.

Der Übergang von Früh-Nasca zu Mittel-Nasca ist archäologisch durch die Aufgabe des Siedlungszentrum Los Molinos und den Beginn der Siedlungsaktivität in La Muña gekennzeichnet. Ebenso ist auch für das Zentrum Cahuachi in Nasca am Ende der Früh Nasca Zeit ein Ende der monumentalen Bautätigkeit festzustellen.
In der Keramik verläuft der Übergang weniger abrupt. Es ist eine Kontinuität in Formen und Verzierungsthemen festzustellen und für Kontexte aus der Übergangszeit kann unter Umständen eine genaue zeitliche Einordnung schwierig sein. Jedoch treten bereits in den untersten Schichten von PAP 78, wo dieser Übergang dokumentiert wurde, eindeutige Mittel Nasca Merkmale auf.
Später in der Mittel Nasca Periode kommen weitere Innovationen hinzu. Dies sind vor allem die von Blagg (1975) dokumentierten Innovationen wie der Bizarre Innovation Style und der Progressive Monumental Style, aber auch andere Merkmale die eher dem konservativen Nasca 5 entsprechen. Auf dieser Grundlage lassen sich in Palpa recht deutlich eine frühe und eine späte Phase der Mittel-Nasca Zeit unterscheiden (Mittel-Nasca 1 und 2).
In einigen Merkmalen entspricht Mittel-Nasca 1 Dawsons Nasca 4. Allerdings sind diese Elemente auch während Mittel-Nasca 2 noch vorhanden, während andere Merkmale von Mittel-Nasca 1 eher Dawsons Nasca 5 zuzuordnen sind. Außerdem macht die Zusammenfassung beider Stilphasen in Mittel-Nasca deutlich, dass sie in der Siedlungsgeschichte als zusammengehörig aufgefasst werden müssen. Dies ist ein wesentlicher Unterschied zur Dawson Sequenz, wo Nasca 4 stilistisch eher zu Früh Nasca gerechnet wurde. In Palpa erscheint Keramik vom Nasca 4 Stil dagegen eher als konservative Mittel Nasca Komponente. In Diesem Zusammenhang ist es interesant, dass die Häufigkeit dieser konservativen Mittel-Nasca Keramik in Ica weit größer ist, als in Nasca. Auf dieser Grundlage könnte Das südliche Nasca Gebiet also auch für Mittel-Nasca als innovatives Zentrum gelten, wenn auch kein besonders hervorgehobener Fundort mehr zu bemerken ist. Der stratigraphische Befund aus Palpa, die Definition der Siedlungsperioden und nicht zuletzt das Fehlen von Nasca 4 Keramik in Cahuachi machen deutlich, das nach Nasca 3 ein starker Bruch in der

Siedlungsgeschichte erfolgt, der durch die Definition von Früh Nasca und Mittel Nasca am deutlichsten wird.
Der Übergang von Mittel-Nasca zu Spät-Nasca ist in Palpa noch nicht genau zu definieren. Die Spät-Nasca Keramik aus Parasmarca stellt einen stilistisch einheitlichen und klar zu unterscheidenden Block dar. Stilistisch ist der Übergang von Mittel-Nasca aber nicht nachvollziehbar und es ist anzunehmen, dass entsprechende Kontexte noch nicht dokumentiert wurden. Dies wird auch durch eine Lücke von 50-100 Jahren in den 14C Daten bestätigt. Einzelne Fragmente aus Mittel-Nasca und Spät-Nasca deuten stilistisch auf diesen Übergang hin und es ist fraglich, ob eine komplette Siedlungsperiode einzuschieben ist. Das Material dieses Übergangs ist möglicherweise in Teilen Dawsons Nasca 6 zuzuordnen. Dennoch darf die Übergangsphase nicht als Nasca 6 angesprochen werden, da nicht sicher ist, ob alle Merkmale, die mit der Definition von Nasca 6 verbunden sind, wirklich in diese Übergangsphase fallen. Es ist anzunehmen, dass einige Nasca 6 Merkmale Mittel-Nasca zuzuordnen sind, während andere Spät-Nasca entsprechen. Genaueres muss aber durch zukünftige Studie noch näher bestimmt werden.

Die Untersuchung bestätigt also die bereits zu Beginn de Palpa Projekts geltende Annahme, dass die Siedlungsgeschichte von Palpa sich am besten mit einer Abfolge von vier Siedlungsphasen beschreiben lässt: Initial Nasca, Früh Nasca, Mittel Nasca und Spät Nasca. Als wichtiges Ergebnis dieser Arbeit konnten die einzelnen Perioden bezüglich des genauen Inventars von Formen und Verzierungen genau definiert und in einem Katalog vorgelegt werden. Den 14C Datierungen zufolge ist jeder Periode eine Dauer von etwa 150 – 200 Jahren zuzuordnen. Eine weitere Feinunterteilung der Siedlungsperioden zeichnet sich ab, ist aber nicht so deutlich, dass sie auf vereinzelte Fragmente anzuwenden wäre. Vielmehr ist eine solche Unterscheidung nur bei größeren Keramikmengen aus einem Kontext möglich. In diesem Bereich können weitere Detailstudien in der Zukunft für mehr Klarheit sorgen. Wichtiger aber sind weitere Untersuchungen zu den regionalen Keramiksequenzen der anderen Täler. Das für Palpa entwickelte Schema ist nicht unbedingt auch für andere Täler gültig. Die Übertragbarkeit muss im Einzelfall durch weitere Regionalstudien überprüft werden. Das Model Dawsons ist jedenfalls nicht uneingeschränkt geeignet um auf die Materialien aus Palpa angewandt zu werden. Erst wenn die weiteren Regionalchronologien zufriedenstellend erforscht sind, sind Vergleiche zwischen den Tälern und weitere darauf basierende kulturhistorische Interpretationen möglich.

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