Andean Past

Volume 3 Article 10

1992

To Fish in the Afternoon: Beyond Subsistence Economies in the Study of Early Andean Civilization

Jeffrey Quilter
quilter@fas.harvard.edu

TO FISH IN THE AFTERNOON: BEYOND SUBSISTENCE ECONOMIES IN THE STUDY OF EARLY ANDEAN CIVILIZATION

Jeffrey Quilter
Ripon College

> For as soon as the distribution of labour comes into being, each man has a particular, exclusive sphere of activity, which is forced upon him and from which he cannot escape. . .while in communist society, where nobody has one exclusive sphere of activity. . .society regulates the general production and thus makes it possible for me to do one thing today and another tomorrow, to hunt in the morning, fish in the afternoon. . .
>
> Marx and Engels, cited in Siskind 1973: 194

> Man doth not live by bread alone. . .
>
> Deuteronomy 8:3

Preface

Not too long ago, I wrote a book review of a compendium of articles on cultural evolution in the prehistoric Andes. I found some of the articles wanting for various reasons and I said so in my review, although I tried to temper my criticisms with praise for effort and for the very valuable contributions that did exist in the volume. The review was published and very shortly thereafter I received letters as well as verbal thanks for my kind remarks from various authors whose works appeared in the volume in question! I was flabbergasted. I hadn't enjoyed being critical but I had felt it was my duty to point out weaknesses, and I had expected some rather tense moments at the SAA and other meetings upon confronting some of my colleagues whose work I had criticized. I finally had to summon up a different kind of courage to ask one of the authors why he was so happy. The reply was that the articles were relatively unmodified papers read at a conference years before and that he (and just about everybody else) had considerably revised his thoughts on the topic which now appeared in print! Thus, few of the authors apparently attached great importance to the articles, and my review had allowed everyone to receive praise for efforts now lightened by the passage of time and for ideas that were still important but not quite as relevant as they once were, and therefore not counted for much.[1]

I am now in a situation similar to those I have criticized. It is 1991 and I have been told that a paper I read in 1986 finally will be published. Since I have been given the opportunity to revise my work, I don't want to simply let the article be published as an historical document, and I feel, given the relatively few chances archaeologists have to see their ideas appear in print, that I should use the opportunity for publication wisely.

To maintain the maritime theme, many a tide has ebbed and flowed since I presented my ideas in my conference paper. I mostly think the same things, but I have followed some routes of investigation and not others. Other archaeologists have pursued their studies along lines similar to mine or different ones that nevertheless impinge upon some of the concerns I raised in my original paper. In order to maintain the historicity of this paper as a document written in the mid-1980s and yet take advantage of some of the new information on the topic that has appeared since then, I shall organize this article by presenting the points I made in the original paper but also updating my views.

---

[1] I should point out that nowhere was it noted in the volume in question that the articles were originally read at a conference. For reasons that I hope will be obvious, I think it best that the volumes and authors remain anonymous.

ANDEAN PAST 3 (1992): 111-125.

Why fish? Why Peru?

I began my 1985 paper by reviewing the history of archaeological studies of the Peruvian Preceramic Period (see Feldman 1992 [this volume]; Quilter 1991b). I noted that subsistence economies had become *the* major topic for research in the period and place. After World War II, the work of Junius Bird (*e.g.*, 1948; Bird *et al.* 1985) and Frédéric Engel (*e.g.*, 1963, 1966) had focused attention on the long period of pre-pottery societies in the Central Andes and by the 1960s and 1970s field work, mostly by Edward Lanning (*e.g.*, 1963, 1967), Thomas Patterson (*e.g.*, Patterson and Lanning 1964), and Michael Moseley (*e.g.*, 1975) had developed a fairly detailed picture of the Preceramic on the Central Coast.

Earlier scholars had recognized that there was a long period of early societies in the Andes (*e.g.*, Max Uhle 1920) but they were attempting to define the basic nature of Andean civilization and chronological frameworks. The large monuments and plentiful artifacts of later societies offered easier material to work with than shell mounds and allowed attempts at linkages with other areas of Nuclear America in a theoretical orientation that saw migration as a major force in past events and in a pre-radiocarbon methodological world that relied on the kinds of cross-dating techniques more easily done with ceramic sherds than shell fishhooks.

It seems no accident that the development of an interest in Preceramic Peruvian subsistence economies occurred with the growth of the New Archaeology which emphasized local developments over diffusion, regional studies rather than site-specific investigations, and the subsistence economies at the base of societies rather than views from the tops of pyramids. In Peru, this general trend in archaeology was coeval with the establishment of standardized chronological conventions in the schemes of Rowe-Menzel (Rowe 1962) and Lumbreras (1974). Though they differ in their fundamental theoretical positions, their time periods are almost identical, and though matters of chronology are still being discussed, they provided a general scheme that gave license to archaeologists to investigate what was then and is still sometimes called "culture processes" in a way that had not been done before, though of course, interest in such cultural dynamics had always existed to a greater or lesser degree.

A German-Peruvian colleague once asked me why there were so few thorough site reports published by archaeologists from the United States. The answer lies in the way in which archaeology is structured. German, Italian, French, and Japanese archaeologists commonly work in the Andes and elsewhere as members of large teams, usually from a national university and with the official status of a diplomatic mission with full support and representation through the national embassy in Peru. While there are few opportunities to do research other than that focused on by the director of the project (and relatively few job opportunities back home) the team members have the luxury of conducting detailed, long-term studies with relatively little pressure to develop new theories or to publish or perish. Thus, well-funded, detailed site reports are produced, often with little to say about major new frameworks to interpret the past. While this approach to archaeology has its own drawbacks, it differs markedly from the competitive, theory-oriented archaeology done by academicians from the United States who operate overseas with virtually no ambassadorial support.

Most relevant to the topic of the Maritime-Terrestrial Debate is the fact that the "free agent" status of United States' archaeologists allows those who are successful in working in Peru and other foreign countries to pursue those research topics that they desire rather than one dictated from on high. The outcome of all this from the late 1960s through the early 1980s is that a number of U.S. scholars addressed the "maritime-terrestrial" debate but the focus of research varied. Lynch (1967; *cf.* 1989) and Osborn (1977) dealt with large-scale relations between the coast and the highlands. Others (Lanning 1963; Moseley 1975; Raymond 1981; Wilson 1981) were primarily concerned with the relative importance of littoral versus *lomas* and valley resources within the coastal zone itself. The maritime part of the dyad could mean shellfish, fish (small/large, near shore/off shore), or sea mammals, with seabirds sometimes thrown in for good measure. Terrestrial resources were primarily

defined as cervids and camelids. The time period in question could be early--thus raising the question of the relative value of chasing deer in the *lomas* versus spending long hours digging for clams or fishing--or late, opening up problems over the relative value of collected resources as opposed to cultivated plants.

The result of all this is that the Maritime-Terrestrial Debate was somewhat amorphous, with scholars focusing their discussions on related but not necessarily the same subject matter. In fact, Michael Moseley (1975: 113) used the term "hypothesis" to refer to "the development of desert irrigation. . .under the direct control of already established bodied of corporate authority and not in the hands of private farmers", rather than to the role of marine resources *per se*. The "maritime hypothesis" is first referred to as such in the 1981 articles by David Wilson and J. Scott Raymond, and the Maritime-Terrestrial Debate was publicly, at least, reified as an entity in the 1986 conference that resulted in this and the other papers in this volume, after the major works on the topic had been published.[2]

While Moseley's 1975 book coalesced debate that had begun earlier, it is less the "Maritime Foundations" than the "Andean Civilization" in his title that has resulted in all the fuss. I suggest that this is so because the heart of the matter is a theoretical perspective that views some societies as "civilized" and others as not, some societies as creative and pristine and others as borrowers and secondary (or tertiary and out of the picture altogether), some societies as "hot" and others as "cold" (Bender 1985). In the largest sense, this discussion is hundreds of years old, while in the context of the Andes it extends back a century to the opposing views of scholars on the date, place of origin, and nature of Peru's earliest "civilization".

As evidence in support of my claim, I wish to point out that since 1986 relatively few papers have continued to discuss the importance of terrestrial versus maritime resources. The arguments have shifted to questions on the appearance of the first Andean state and the chronological and other evidence to support citation of the "pristine plum" of the "earliest", "first", and "biggest".

Of course, there *is* something to the "pristine argument", states did appear in some places before others. But the question is, what are we to make of it? What guides our investigations other than attempting to seize the pristine plum for tenure, promotions, grants, and coverage in major media? "Civilization" is commonly linked with "achievement" and both are associated with artifacts which look good in museums and might appear in coffee table books rather than be relegated to fuzzy photographs and line drawings in volumes no one reads other than specialists. Even if one poses that the state is the excrescence of society rather than its apotheosis, it still makes for more interesting reading than egalitarianism. Unfortunately, goose-stepping state troops appear to make for better fantasies than a band of egalitarian foragers dancing merrily by the sea.

Given all of the above, then, what shall we do about early Peru? For one thing, we can start with the basic facts upon which almost all scholars agree. In the Central Andes, before about 4500 b.p., societies were small-scale, egalitarian communities that survived through extracting most of their food and other resources from what nature provided. By about 3500 b.p., societies in many parts of Peru had changed in that many communities were larger than before. Many of these communities were more actively involved than earlier ones in producing their livelihoods through the use of domesticates. There were social divisions in some communities that were elaborations of earlier kin units. Some communities or social divisions in them had greater access to some goods than other communities or social divisions. A number of communities engaged in activities that produced large building complexes. Some of the activities that occurred in these buildings were ceremonies that reified the social system.

---

[2] Wilson (1981) also refers to the "agricultural hypothesis", but in fact, the debate had already included the relative merits of maritime versus hunted terrestrial resources (e.g., Osborn 1977).

These generalities form a basis for discussion, and most of the present debates lie beyond them. In the following subsections, however, I will present what I believe to be the current state on knowledge regarding topics linked to the above generalities that are crucial to a development of a more fine-grained understanding of early Peru. They are the same subsections used in my original paper.

Subsistence economies

One essential fact is now clearer than in the halcyon days of yore: Late Preceramic and early Initial Period people on the coast relied on fish as their chief form of animal protein. This has been determined through a number of relatively recent excavations as well as a review of earlier work. At Alto Salaverry (S. Pozorski and T. Pozorski 1979), Aspero (Feldman 1980, 1985, 1992 [this volume]), Cardal (Burger 1987; Burger and Salazar-Burger 1991), El Paraíso (Engel 1966; Quilter 1985; Quilter *et al.* 1991), La Galgada (Grieder *et al.* 1988), Los Gavilanes (Bonavia 1982), Las Haldas (Pozorski and Pozorski 1987), Huaca Prieta (Bird *et al.* 1985), and Huaynuná (T. Pozorski and S. Pozorski 1990), a preponderance of fish and mollusk remains is found with relatively little in the way of terrestrial mammal remains. Although the degree of analysis of food remains varied among the projects at the sites listed above, enough basic research has been carried out that an overall estimate of subsistence economy can be made for each location and in general. Mollusks played a secondary role in diet but were probably important as a reliable and nutritious staple. There is no evidence that domesticated guinea pigs, which could have provided a significant source of animal meat, were used in coastal Peru during these early periods. Deer were probably exploited but were likely few in number. Minor contemporary resources, such as crayfish, may have contributed significantly to the diets of riverine dwellers (Quilter *et al.* 1991).

Concerning domesticated plants, the picture is somewhat more complicated. A variety of early domesticates have been cited for the Nanchoc-Zaña Valley system (Dillehay *et al.* 1989) although, at the time of my writing, there have been difficulties in corroborating the early forms of the plants with available radiocarbon dates (J. Rossen and T. Dillehay, personal communication, February 1991). Feldman (1980: 182-184) reported twelve maize cobs for Aspero, three of which were found in secure preceramic context, and Bonavia (1982; Bonavia and Grobman 1989) has reported great amounts of maize for the Late Preceramic site of Los Gavilanes. Burger and van der Merwe (1990) have detected isotopes in human bone that indicate maize was a dietary component in Late Preceramic Peru. But while maize appears to have been present in the Late Preceramic Period, it does not generally appear to have played a major role in diets.

The evidence as it currently stands suggests that a number of basic domesticates were grown throughout much of Late Preceramic Peru (where conditions allowed), such as chili peppers, gourds, squashes, beans, some fruits, and cotton, and it is likely that other cultigens were either in the process of domestication or were grown in limited areas and had not yet spread throughout the greater Central Andes.[3]

The statement that the process of domestication of the array of plant domesticates that later formed the basis of Andean societies was underway but had not yet reached its maximum seems almost indisputable. Despite occasional representation in often dubious contexts, peanuts, maize, avocado, and a variety of other plants are not so common as to give full confidence that they were important components of the diets of the general population of people living in the Central Andes. Furthermore, the evidence for highland Peru indicates a gradual process of domestication and spread

[3] It should be noted that chili peppers, gourds, and some squashes were domesticated in the Middle Preceramic Period.

of both plants and animals throughout the highlands and then to the coast, a process which continued throughout the Late Preceramic Period and into the Initial Period (Quilter 1991b).

Concerning subsistence, then, there is one over-riding point that can be made for Late Preceramic-Initial Period Peru: potential plant and animal domesticates had neither been fully brought under human control nor their production diffused to the point at which all communities could produce or have relatively easy access (through exchange) to the full range of foods and pack animals available in later time periods.

Much of the earlier debate on subsistence economies discussed questions involving human nutritional needs: where was the protein, where were the carbohydrates, and were there sufficient calories given one proposed diet versus another? While there likely are some broad and general statements that can be made regarding basic dietary requirements for humans, I believe that such arguments are dangerous for a number of reasons.

As I noted elsewhere (Quilter and Stocker 1983), the ethnographic evidence strongly suggests that human metabolic systems are quite malleable when it comes to diet, from subsistence economies that are high in meat and fat to diets that are made up almost entirely of carbohydrates. Any perusal of the work of nutritionists indicates that opinion varies on adequate or minimum requirements for human survival. On a related issue, the way in which the human body actually metabolizes food is a very complex process, so that simply adding up calories or grams of fat does not adequately account for how a total diet works for an individual or group.

The problem is further complicated by the fact that estimates of the success of a given diet cannot be measured on a scale that is based on Wonder Bread-eating twentieth century North Americans who hope to live out their allotted three score and ten or more years. A population may have a very poor diet, live only very short life spans, and yet reproduce themselves and their society satisfactorily enough to leave substantial traces in the archaeological record. An examination of the information available for the Middle Preceramic Paloma population (Quilter 1989a) shows that very few individuals reached the age of fifty, and yet the cultural system was "successful", maintaining itself over many hundreds of years. All of this is an anthropological truism, but I believe that it has been overlooked in the debate on subsistence economies.

Lastly, there is the problem of the archaeological record, especially in coastal Peru. Mark Cohen (1975, 1979) has reminded us that we are not examining total inventories of food remains despite the excellent preservation at coastal sites. This means that we are attempting to reconstruct a diet from less than total information, perhaps overlooking minor resources that made significant differences in the food economies of ancient peoples and with a less than adequate understanding of how diverse food resources interacted with one another to sustain populations. The chemical analysis of human bone offers hope for better study of subsistence economies although there remains the problem that we only see the general picture of the role of major food groups at work, leaving us with less than a full understanding of the specific components of food economies.

Perhaps, then, we must rely on broad generalizations regarding subsistence economies and their relation to the development of hierarchical social systems in Peru. If this is the case, it is significant that all of the present evidence suggests that the complete range of Andean domesticates was widespread and available in the Central Andes only during the Early Horizon and perhaps not until later during that period for some areas. For example, in the Casma Valley study by Shelia and Thomas Pozorski (1987), there is a significant growth in the diversity and abundance of domesticated plants and animals at the Early Horizon sites of San Diego and Pampa Rosario that appears significantly different in comparison to earlier sites. But subsistence alone does not determine social systems.

Exchange systems

Later Andean societies are often hailed for their elaborate means by which goods were brought from one region to another, such as the "vertical exchange" systems of the Inka (Murra 1972). What is the evidence for inter-regional exchange systems in the Late Preceramic Period?

Much of the discussion on this issue has relied on theoretical possibilities, such as salt (Burger 1985). Admittedly, there is difficulty in seeing exchange of goods that are completely consumed, such as salt, seaweed, and so forth. Finds of potatoes on the coast have been cited as evidence of exchange with the highlands (Moseley 1985: 41; *cf.* Ugent *et al.* 1982). This presents problems. Potatoes are highland in origin but they *can* be grown on the coast (Delavaud 1984: 96). However, the common practice today is for importation of potatoes from the highlands to the coast. So, what do ancient potatoes on the coast signify for understanding prehistoric exchange systems? We can't say for sure.

We can say, however, that for Late Preceramic Peru there are not great numbers of subsistence items found that would indicate long-distance exchanges. The food remains available generally suggest local self-sufficiency. While the record of exchange of subsistence goods may be partly clouded by the nature of the materials involved and the fact that they were consumed, leaving relatively little residue, lack of evidence for pack animals certainly suggests that the human investment in hauling goods up and down the sierra to and from the shore would have been considerably higher than when camelids were fully domesticated and widely available.

The most common items found that indicate trade for the time in question are durable goods such as iron pyrite, anthracite, rock crystal, possibly lapis lazuli and magnetite, and the red diatomite made into distinctive biconvex, rectanguloid, double-holed beads (see Grieder 1988: 83-94). Of course, *Spondylus* shell, probably from the warm waters off Ecuador, also makes its first appearance in Peru. Most of the items made of these materials resemble sumptuary goods such as fancy cups and bowls or ornaments. It appears that these items were usually imported as finished products rather than as raw materials, such as the stone cup from La Galgada in a style resembling Waira-jirca pottery of Kotosh (*ibid.*: 101). The majority of these artifacts have been found in mortuary contexts suggesting that their burial helped reduce inflation and that the exchange of such items was an important mechanism for maintaining social relations. *Spondylus* and red diatomite beads appear to have held special high places in prestige systems in which relatively few people participated.

It is unfortunate that we do not know the sources of most prestige artifacts or the raw materials from which they were made, since that information would be of great use in tracing general exchange routes. Both *Spondylus* and red diatomite, though rare, found their way to both highland and coastal sites. I suspect, however, that for the most part, exchanges were more common within altitudinal zones than between them. One would expect that any significant exchanges in the Late Preceramic Period between coast and highlands would have resulted in a fair amount of camelid wool reaching the coast and cotton moving into the sierra. Coastal winters are chilly enough that wool would have been welcomed from a practical viewpoint and the energies given to textile manufacture throughout the Andes would have encouraged the importation and use of "exotic" fibers. Control of camelid herds in the highlands--whether hunted, semi- or fully domesticated--was apparently advanced enough that some enterprising serranos could have developed exchange networks with coastal peoples, yet there are very few examples of wool fibers in the well-preserved textile inventory of Late Preceramic coastal Peru.

While it is true that in later prehistoric times altitudinal barriers were surmounted by extensive exchange systems, it still remains a fact that travel within an altitudinal zone is considerably easier than between them (Topic and Topic 1983: 243). I suggest that extensive inter-zonal exchanges did not take place in ancient Peru until after llamas were fully domesticated and widely available, probably in the Early Horizon or early Early Intermediate Period.

One of the most detailed studies of exchange of an undoubtedly valuable material in the Andes is the analysis of obsidian distribution conducted by Burger and Asaro (1977). Given its superior cutting abilities, this volcanic stone is surely something that Preceramic peoples desired. Nevertheless, trace element analyses of obsidian defined three large, Late Preceramic interaction spheres, only one of which--the South Highlands/South Coast--includes a coastal domain. The scarcity of obsidian on the North and Central Coasts supports the proposition that little in the way of altitudinal exchange took place.[4]

Within a region, exchange may have been extremely important in contributing to elaborated socio-political interactions. Cotton production appears to have been an important activity in coastal valleys, yet we still have very little information on how it was grown and distributed. Did each community make its own textiles? If so, were they exchanged as finished products with other groups? Studies by Stephens and Moseley (1973, 1974) of cotton remains from Ancón and Ventanilla sites show that unprocessed cotton parts, including fibers, seeds, and bolls, were common at most sites for most time periods. These sites were fairly far from areas where cotton could have been grown. Also, while the excellent preservation of the Peruvian coast allows for the recovery of unburnt cotton seeds, most of those from the shore sites were completely charred (Stephens and Moseley 1973: 187). This suggests that the shore dwellers did not save seed for planting by themselves and that there was little to no concern about the next crop, probably because of social ties that guaranteed a supply of fiber or, if the population was mobile, because a dependable supply was available.

There thus appears to be evidence of multicentric exchange systems in Late Preceramic Peru. On an intra-regional level, some items, such as cotton and probably subsistence goods, were exchanged by semi- or fully specialized communities. The most likely items coastal communities exchanged for cotton are fish and other marine resources. Alternatively, once exchanged, raw cotton could have been made into textiles which were then exchanged with other communities--it seems significant that a small fishing village such as Huaca Prieta had so many elaborate textiles. On an inter-regional level, current evidence indicates that prestige items were the primary goods exchanged. This suggests that there were at least two socio-political levels as well, one intra-regional and the other inter-regional.

Settlement systems

One way to explore socio-political systems is to examine the nature of sites and their relations to one another in natural and political landscapes. While discussion of exchange systems includes this kind of approach, it can be more directly examined by studying where sites are located and what kind of sites they are.

Since 1986, I have developed an argument that began by noting that there are very few known small Late Preceramic sites in the Ancón-Chillón region and in the Central Coast in general. They may be buried under later occupations or they may be buried (atypically) in floodplain locales, but for the present, few are known. Furthermore, one of the crucial aspects of the original formulation of the "Maritime Foundations" argument is that the *lomas* were abandoned in favor of valley and shoreline settlements. Lanning (1963, 1967: 51; *cf.* 1977) suggested that the *lomas* had been desiccated, forcing a population movement, and Moseley (1975: 24) continued the idea that *lomas* abandonment resulted in a transition to a fishing economy for coastal dwellers.

---

[4] Interestingly, the exchange pattern of obsidian as outlined for the Late Preceramic Period remains basically the same throughout prehistory, according to Burger and Asaro (1977), and obsidian is never as common on the North and Central Coasts as it is in the south, even though "verticality" did increase. This suggests that more was occurring than exchange simply as a means to gain desirable goods and that other factors, perhaps more rooted in social ties, account for the observed patterns.

Work at the Paloma site (Quilter 1989a) and other Middle Preceramic occupations has demonstrated that fishing and *lomas* exploitation occurred simultaneously. Shoreline sites that show evidence of specialized fishing activities represent either relatively short-term occupations in a seasonal round of movement, or specialized activity sites of more sedentary communities.

Lanning's (1963, 1967: 51) assertion of a lifting of the fog belt that would result in the shrinkage of the *lomas* fields has never been demonstrated as an irreversible process that occurred in the Preceramic Period. Fields apparently fluctuate in size, depending on a variety of circumstances, including human overexploitation, and they have shifted in size many times in the past. Furthermore, an analysis of the available information indicates that *lomas* sites continued to be occupied in the Late Preceramic Period on the South Coast (Quilter 1989b). It seems highly unlikely that an environmental change that was severe enough to reduce the size of the *lomas* on the Central Coast would have left the South Coast *lomas* verdant enough to continue to support human populations. While it may have been possible that environmental or demographic conditions were different enough in the two regions that Central Coast *lomas* were abandoned while South Coast *lomas* were not, it seems more likely that there were other significant factors that resulted in the observed patterns.[5]

As South Coast *lomas* continued to be occupied, their inhabitants maintained ways of life not fundamentally different from those practiced in the Middle Preceramic Period, even with the introduction of cotton (see Wise 1990). On the Central and North Coasts, however, the Late Preceramic Period is characterized by the beginnings of the construction of large-scale architectural complexes. It thus appears that the causes of the construction of monumental architecture are neither *lomas* desiccation or abandonment nor the introduction of cotton *per se*. I suggest that it was rather the way in which populations were mobilized in the valleys of the Central and North Coasts that resulted in the construction of large stone and adobe building complexes.

As noted above, there seems to have been a fairly high degree of local self-sufficiency in terms of food, but cotton could only be grown in the river valleys, whether on shrubs or larger, low-management trees. The concentration of populations in river valleys may thus have been linked to the control of cotton production. But control of cotton production alone cannot explain the development of monumental architecture on the Central and North Coasts, otherwise we might expect a similar process to have occurred on the South Coast.

In what ways is the South Coast different from regions farther north? There are four major differences. First, the region is significantly drier and becomes more progressively more so towards the Chilean border. Second, the area is outside the greatest concentration of exploitable biomass of the Humboldt fishery. Third, the lower valleys--the richest area for both hunting-and-gathering and agriculture--are relatively more isolated both from each other and from the sierra. The gradient from sea level to the higher reaches of the Andes is less steep and the overall distance necessary to travel from one zone to the next is greater than farther north. Fourth, southern river valleys tend to have relatively constricted topographies with smaller floodplains, and very few valleys merge with one another as is the case northward. There are exceptions, and it may be significant that the area of greatest autochthonous cultural elaboration south of Lurín, although much later in prehistory than the Preceramic Period, is the Nazca-Ica region where relatively flat expanses link coastal drainages, just as similar arrangements exist in the open terrain from Lurín to Ancón on the Central Coast and in the

[5] Craig (1992 [this volume]) argues that Lanning's direct evidence for shrinking *lomas*--changing land snail distributions--can better be explained by natural factors unrelated to major environmental change.

Moche-Chicama region on the North Coast.[6] It is not my contention that these environmental differences caused or prevented the development of monumental architecture, but they did provide the settings in which people interacted, and thus contributed to the human condition and changes in it in each particular region.

Socio-political systems

While there is no doubt that monumental architecture first appeared in the Central Andes on the Central Coast--although highland research lags behind coastal studies--and there are at least some good leads as to why such developments took place, when these events occurred and the nature of political systems such architecture represents are now the main issues of debate.

Although the Rowe-Menzel chronology that most North American archaeologists use was designed to take into account cultural "spill-over" across temporal periods, there has recently been discussion as to whether the system adequately accounts for culture change in the Late Preceramic and Initial Periods (S. Pozorski and T. Pozorski 1990, 1991; Quilter 1991a). Part of the problem appears to lie in attempting to read culture change by using radiocarbon dates from the monumental architectural complexes themselves. While this may seem a logical thing to do, the activities of building and rebuilding, of adding extensions to old buildings or constructing new ones, using old materials for fill, and the sheer immensity of monumental sites all lead to difficulties in achieving dates that can be confidently used to track culture change. For example, it has been argued that the heyday of Initial Period use of Huaca La Florida dates to circa 1750 b.c., thus suggesting that the Late Preceramic site of "El Paraíso was in use concurrently with, and possibly for quite some time after, the similar ceramic site of La Florida" (S. Pozorski and T. Pozorski 1990: 489). However, excavations in stratified deposits at Ancón have yielded dates for La Florida ceramics of 1285 b.c. for Phase 1 and 1220 b.c. and 1200 b.c. for Phase 2 (T. Patterson, personal communication, May 1991), and most of El Paraíso dates are in the 1550-1450 b.c. range (Quilter 1985: Table 1).

In my symposium paper of 1986, I myself noted that there are overlaps in radiocarbon dates for Preceramic and Initial Period centers. Now, I believe that while there were almost certainly overlaps in the occupations of different monumental centers, the artifactual, stratigraphic, and radiometric evidence suggests that the introduction of ceramics, and probably other artifacts and behavior occurred in a relatively systematic manner between 1800 and 1400 b.c. "Relatively systematic" still leaves open the possibility, and I believe likelihood, that new ways of doing things were adopted earlier at some places than others and that people of some monumental centers were more conservative than others. In my view, the overlap in radiocarbon dates is probably the result both of the complexities of establishing meaningful dates at big sites and of the exciting potential of archaeology on the coast of Peru to document changing political, social, and economic fortunes of local populations and their architectural complexes in rather minute and precise ways.

As to what monumental architectural centers represent in terms of socio-political systems, the matter is more problematic since the issue is one of the interpretation of archaeological remains. We know and generally agree on the following. The complexes share common architectural features and methods of construction, including flat-topped pyramids, sunken courts, central stairways or ramps, and *shicra* (cane nets filled with rock) fill. Complexes tend to consist of separate buildings in the Late Preceramic Period and of buildings linked together by ramps or other constructions in the Initial Period. At least two Late Preceramic complexes are oriented to celestial phenomena (Quilter 1991b) while, at present, others cannot be clearly shown to have specific orientations (*cf.* Williams 1985). Monumental sites were placed in prominent locations and may have been at key points in

[6] Nazca-Ica is the same region in which inter-regional ties for obsidian distribution are most notable (Burger and Asaro 1977).

communications routes. These complexes took a considerable amount of time and effort to build, including the use of standardized engineering systems, at least within each site. The architectural features at such sites indicate that ceremonial activities took place which were associated with or related to the Kotosh Religious Tradition (Burger and Salazar-Burger 1985, 1986). Other features suggest that rooms served as storage facilities, residences, and possibly workshops (see Quilter 1991b).

While the above represents an attempt to highlight consensus on monumental architecture, there is much that is still uncertain. Regional styles and temporal change in architectural canons are still poorly documented. While regional styles for monumental centers likely existed, there is also evidence for significant distinctions in styles of nearby, contemporary sites, such as seen in roughly coeval (Initial Period) Cardal and Mina Perdida in the Lurín Valley (Burger 1987: 372). From the Late Preceramic Period into the Initial Period, temporal change generally appears to have occurred in a shift from relatively small ceremonial chambers to more public arenas (*e.g.*, Grieder and Bueno M. 1988), a trend of increasingly more formalized and symmetrical arrangements of rooms and architecture, and a gradual increase in the amount of large-scale public art.

How is one to interpret the available information as to the socio-political systems it represents? There are two schools of thought at present. One (Haas 1982, 1987; S. Pozorski 1987) argues that there is evidence for the existence of state-level societies, at least by the Initial Period. The other argues that the state cannot be demonstrated and generally prefers not to use cultural evolutionary labels (Burger and Salazar-Burger 1991; Quilter 1991a, 1991b; Quilter *et al.* 1991).

I am one of the latter. I see no compelling evidence that the hallmarks of the state are present for either Late Preceramic or Initial Period Peru. There are no burials that indicate distinct status differences as would be present in a stratified society with a ruling class. There is no clear evidence of military organizations that indicate a monopoly of physical force. There is no evidence for marked differences in the distribution of wealth or the access to basic goods and services necessary to sustain life. The elaborateness of monumental architecture is impressive but by itself cannot be taken as a signal of statehood, since large temple complexes can be built and maintained without a state institution, as is the case for Hopewell in North America or temples in India.

There are some signs of status differentiation, such as the distribution of luxury goods discussed above, but this does not appear to represent state level societies. While the Casma Valley data for which the claim for statehood has been made (S. Pozorski and T. Pozorski 1987) is extremely rich and elaborate, it is also immense both in terms of the size of buildings and in terms of the complexities of dating and correlating different architectural complexes with one another. The scale of excavations and study of the Late Preceramic and Initial Period complexes there have rarely been equal to the size (including depth) of the structures involved nor of their interrelations.

Even if a Casma polity did briefly organize itself into a level of hierarchy that could be called a state I do not believe that it sustained itself long enough to serve as a model or influence by which successive states and continuing political hierarchization of societies in the Central Andes occurred. Events late in the Initial Period are still murky, and while the Early Horizon presents a time marker of stylistic unity throughout an extensive area of Peru, there is no indication that Chavín was a state (see Burger, in press). Again, the end of the Early Horizon is clouded, but there are signs of turmoil, including military strife as evidenced by fortifications and relocation of populations in such places as defensible hilltop sites. Finally, in the Early Intermediate Period, perhaps in their precursors such as Gallinazo and certainly with the societies represented by the Moche and Lima styles, the first clear evidence of states emerges in the archaeological record, with all the ostentatious panoply of power.

Summary

So, what is the state of the Maritime-Terréstrial Debate fifteen years or more after its heyday? As with many academic discussions, it was not so much settled as put back on the shelf for a while.

The chief question of the relative importance of fish and other marine resources does seem to have been settled in favor of the maritime viewpoint and we have at least a general view of subsistence economies. What remains to be delineated, however, is the way in which the process of the adoption of domesticates was linked to other cultural developments, especially the interrelations of different regions in the Central and greater Andes. I believe that continuing research will demonstrate that there was a variety of social and political systems that developed in the Central Andes in the Late Preceramic and Initial Periods. Societies experimented with new ways of organizing themselves while they assimilated and reacted to the opportunities and restrictions given to them by new means of subsistence and communication and the changing social environment that came with plant domestication, pack animals, irrigation, and increased use of metallurgical, ceramic, and weaving technologies.

In addition to the Shelia and Thomas Pozorski's (1990, 1991) highlighting of the apparent overlap of dates for Late Preceramic and Initial Period monumental centers, Richard Burger and Lucy Salazar-Burger (Burger 1987; Burger and Salazar-Burger 1991) have noted that the Initial Period sites of Cardal and Mina Perdida have overlapping dates even though they are only 5 km apart, and they raise the question of what such proximity and contemporaneity may signify for understanding the culture history of the lower Lurín Valley. I think that some potential explanations are at hand, provided a crucial question can be answered.

The question is whether or not the population of the Lurín Valley was concentrated at Mina Perdida and Cardal at the time these centers were built. Burger and Salazar-Burger (1991: 292) suggest that the residents of Cardal were only a small part of the support population that presumably built and used the temple complex. On the other hand, the number of contemporary, small-scale sites in evidence for Late Preceramic and Initial Period centers on the Central Coast is small, as I noted above.

There are three possible explanations for the relationship of monumental centers to the distribution of people in the landscape, each non-exclusionary so that each may have operated to some degree: 1. Populations were concentrated at the sites themselves; 2. Populations were distributed locally; and 3. Populations were relatively far away from the lower valleys where monumental sites occur.

Each of these three possibilities might result in slightly different social roles for monumental centers. If populations were concentrated at the centers, then the construction of elaborate public architecture may have been the manifestation of a system of competition similar to the potlatches of the Northwest Coast of North America (see Ravines and Isbell 1975). If the populations were distributed locally (and the sites they occupied are just not easily visible in the archaeological record), then monumental sites may have primarily served the role of mobilizing the local population's economic and social potential. Monumental sites may either have competed for the same groups of people, coaxing or cajoling their allegiance to one center as opposed to another, or they may have had their own local groups and competition may have existed in the potlatch-like mode as discussed above. If support populations were relatively distant from the centers, the monumental complexes may have served as pilgrimage centers, as did Pachacamac in the Late Horizon (see Burger, in press).

Of course, it is possible that the centers were configured so that all three of these models were in operation or that different centers were oriented differently, with some emphasizing one role more than others did. But the predominance of one form of organization as opposed to the others has implications for the nature of the socio-political system in operation at such monumental sites. None of these systems would have necessitated the existence of state institutions. In fact, if the position that states did not emerge in the Andes until much later is correct, the implication that follows is that the socio-political systems of the Late Preceramic and Initial Period centers were ones that would discourage forces that encourage the creation of class systems and bureaucratic institutions. This means that socio-economic systems diffused conflicts between rival centers, discouraging warfare and

the development of conquest states. Also, there were impediments to the process by which the heads of corporate groups, or "chiefs", at such centers would otherwise have begun to define their self-interests as more closely linked with people in similar positions at "rival" centers than with their own kinsmen, producing class formation through marriages and other forms of alliance. If so, this would suggest that some kind of competitive system was more likely in operation as such centers than other systems that would encourage either warfare or the development of ruling classes through alliances.

Research in the Central Andes is reaching the point where the assessment of such models for determining the nature of early monumental centers will soon be achieved. Once accomplished, the delineation of the time and place where class formation did occur will be easier to do. In advancing the larger goal of understanding the culture history of early Peru, the Maritime-Terrestrial Debate has served archaeologists well.

References

Bender, Barbara
1985 Prehistoric Developments in the American Midcontinent and in Britanny, Northwest France. In *Prehistoric Hunter-Gatherers, The Emergence of Cultural Complexity*, edited by T.D. Price and J.A. Brown, pp. 21-57. Orlando, FL: Academic Press.

Bird, Junius B.
1948 Preceramic Cultures in Chicama and Viru. In A Reappraisal of Andean Archaeology, assembled by Wendall C. Bennett, pp. 21-28. *Memoirs of the Society for American Archaeology* 4.

Bird, Junius B., John Hyslop, and Milica Skinner
1985 The Preceramic Excavations at the Huaca Prieta, Chicama Valley, Peru. Edited by John Hyslop. *Anthropological Papers of the American Museum of Natural History* 62(1).

Bonavia, Duccio
1982 *Los Gavilanes, mar, desierto y oásis en la historia del hombre.* Lima, Peru: Editorial Ausonia.

Bonavia, Duccio and Alexander Grobman
1989 Preceramic Maize in the Central Andes: A Necessary Clarification. *American Antiquity* 54: 836-840.

Burger, Richard L.
1985 Concluding Remarks: Early Peruvian Civilization and its Relation to the Chavín Horizon. In *Early Ceremonial Architecture in the Andes*, edited by Christopher B. Donnan, pp. 269-289. Washington, D.C.: Dumbarton Oaks.
1987 The U-Shaped Pyramid Complex, Cardal, Peru. *National Geographic Research* 3: 363-375.
in press *Chavín and the Origins of Peruvian Civilization.* London: Thames and Hudson.

Burger, Richard L. and Frank Asaro
1977 Obsidian Distribution and Provenience in the Central Highlands and Coast of Peru during the Preceramic Period. *Contributions of the University of California Archaeological Research Facility* 36: 51-83.

Burger, Richard L. and Lucy Salazar-Burger
1985 The Early Ceremonial Center of Huaricoto. In *Early Ceremonial Architecture in the Andes*, edited by Christopher B. Donnan, pp. 111-138. Washington, D.C.: Dumbarton Oaks.
1986 Early Organizational Diversity in the Peruvian Highlands: Huaricoto and Kotosh. In Andean Archaeology, Papers in Memory of Clifford Evans, edited by Ramiro Matos M., Solveig A. Turpin, and Herbert H. Eling, Jr., pp. 45-64. *Institute of Archaeology, University of California at Los Angeles Monograph* 27.
1991 The Second Season of Investigations at the Initial Period Center of Cardal, Peru. *Journal of Field Archaeology* 18: 275-296.

Burger, Richard L. and Nikolaas van der Merwe
1990 Maize and the Origin of Highland Chavín Civilization, An Isotopic Perspective. *American Anthropologist* 92: 85-95.

Cohen, Mark N.
1975 Some Problems in the Quantitative Analysis of Vegetable Refuse Illustrated by a Late Horizon Site on the Peruvian Coast. *Ñawpa Pacha* 10-12: 49-60.
1979 Archaeological Plant Remains from the Central Coast of Peru. *Ñawpa Pacha* 16: 23-50.

Craig, Alan K.
1992 Archaeological Occurrences of Andean Land Snails. *Andean Past* 3: 127-135.

Delavaud, Claude C.
1984 *Las regiones costeñas del Perú septentrional*. Lima, Peru: Fondo Editorial de la Pontífica Universidad Católica del Perú.

Dillehay, Tom D., Patricia J. Netherly, and Jack Rossen
1989 Early Preceramic Public and Residential Sites on the Forested Slope of the Western Andes, Northern Peru. *American Antiquity* 54: 733-758.

Engel, Fréderic-André
1963 A Preceramic Settlement on the Central Coast of Peru: Asia, Unit 1. *Transactions of the American Philosophical Society* 53(3).
1966 Le complexe précéramique d'El Paraiso, (Pérou). *Journal de la Société des Américanistes* 55: 43-96.

Feldman, Robert A.
1980 *Aspero, Peru: Architecture, Subsistence Economy, and Other Artifacts of a Preceramic Maritime Chiefdom*. Unpublished Ph.D. dissertation, Harvard University.
1985 Preceramic Corporate Architecture: Evidence for the Development of Non-Egalitarian Social Systems in Peru. In *Early Ceremonial Architecture in the Andes*, edited by Christopher B. Donnan, pp. 71-92. Washington, D.C.: Dumbarton Oaks.
1992 Preceramic Architectural and Subsistence Traditions. *Andean Past* 3: 67-86.

Grieder, Terence
1988 Burial Patterns and Offerings. In *La Galgada, Peru, A Preceramic Culture in Transition*, by Terence Grieder, Alberto Bueno M., C. Earle Smith, Jr., and Robert M. Malina, pp. 73-102. Austin, TX: University of Texas Press.

Grieder, Terence and Alberto Bueno M.
1988 The History of La Galgada Architecture. In *La Galgada, Peru, A Preceramic Culture in Transition*, by Terence Grieder, Alberto Bueno M., C. Earle Smith, Jr., and Robert M. Malina, pp. 19-67. Austin, TX: University of Texas Press.

Terence Grieder, Alberto Bueno M., C. Earle Smith, Jr., and Robert M. Malina
1988 *La Galgada, Peru, A Preceramic Culture in Transition*. Austin, TX: University of Texas Press.

Haas, Jonathan
1982 *The Evolution of the Prehistoric State*. New York: Columbia University Press.
1987 The Exercise of Power in Early Andean State Development. In *The Origins and Development of the Andean State*, edited by Jonathan Haas, Shelia Pozorski, and Thomas Pozorski, pp. 31-35. Cambridge: Cambridge University Press.

Lanning, Edward P.
1963 A Preagricultural Occupation on the Central Coast of Peru. *American Antiquity* 28: 360-371.
1967 *Peru before the Incas*. Englewood Cliffs, NJ: Prentice-Hall.
1977 Fog, Folly, and Fuzzy Thinking. *Anthropology* 1: 158-164.

Lumbreras, Luis G.
1974 *The Peoples and Cultures of Ancient Peru*. Translated by Betty J. Meggers. Washington, D.C.: Smithsonian Institution Press.

Lynch, Thomas F.
1967 The Nature of the Central Andean Preceramic. *Occasional Papers of the Idaho State University Museum* 21. Pocatello, ID.
1989 Regional Interaction, Transhumance, and Verticality: Archaeological Use of Zonal Complementarity in Peru and Northern Chile. *Michigan Discussions in Anthropology* 8: 1-11. University of Michigan, Ann Arbor.

Moseley, Michael E.
1975 *The Maritime Foundations of Andean Civilization.* Menlo Park, CA: Cummings.
1985 Early Monumental Architecture in the Andes. In *Early Ceremonial Architecture in the Andes*, edited by Christopher B. Donnan, pp. 29-57. Washington, D.C.: Dumbarton Oaks.

Murra, John V.
1972 El control vertical de un máximo de pisos ecológicos en la economía de las sociedades andinas. In *Visita de la Provincia de León de Húanuco [1562]*, Tomo 2, by Iñigo Ortiz de Zúñiga, pp. 429-476. Húanuco, Peru: Universidad Nacional Hermilio Valdizán.

Osborn, Alan J.
1977 Strandloopers, Mermaids, and Other Fairy Tales: Ecological Determinants of Marine Resource Utilization--The Peruvian Case. In *For Theory Building in Archaeology*, edited by Lewis R. Binford, pp. 157-243. New York: Academic Press.

Patterson, Thomas C. and Edward P. Lanning
1964 Changing Settlement Patterns on the Central Peruvian Coast. *Ñawpa Pacha* 2: 113-123.

Pozorski, Shelia G.
1987 Theocracy vs. Militarism: The Significance of the Casma Valley in Understanding Early State Formation. In *The Origins and Development of the Andean State*, edited by Jonathan Haas, Shelia Pozorski, and Thomas Pozorski, pp. 15-30. Cambridge: Cambridge University Press.

Pozorski, Shelia G. and Thomas G. Pozorski
1979 Alto Salaverry: A Peruvian Coastal Preceramic Site. *Annals of Carnegie Museum* 49: 337-375.
1987 *Early Settlement and Subsistence in the Casma Valley, Peru.* Iowa City: University of Iowa Press.
1990 Reexamining the Critical Preceramic/Ceramic Period Transition: New Data from Coastal Peru. *American Anthropologist* 92: 481-491.
1991 The Impact of Radiocarbon Dates on the Maritime Hypothesis: Response to Quilter. *American Anthropologist* 93: 454-455.

Pozorski, Thomas G. and Shelia G.
1990 Huaynuná, a Cotton Preceramic Site on the North Coast of Peru. *Journal of Field Archaeology* 17: 17-26.

Quilter, Jeffrey
1985 Architecture and Chronology at El Paraíso, Peru. *Journal of Field Archaeology* 12: 279-297.
1989a *Life and Death at Paloma, Society and Mortuary Practices in a Preceramic Peruvian Village.* Iowa City: University of Iowa Press.
1989b Core and Periphery in Late Preceramic Peru. Paper presented at the 88th Annual Meeting of the American Anthropological Association, Washington, D.C.
1991a Problems with the Late Preceramic of Peru. *American Anthropologist* 93: 450-454.
1991b Late Preceramic Peru. *Journal of World Prehistory* 5: 387-438.

Quilter, Jeffrey, Bernardino Ojeda E., Deborah M. Pearsall, Daniel H. Sandweiss, John G. Jones, and Elizabeth S. Wing
1991 Subsistence Economy of El Paraíso, an Early Peruvian Site. *Science* 251: 277-183.

Quilter, Jeffrey and Terry Stocker
1983 Subsistence Economies and the Origins of Andean Complex Societies. *American Anthropologist* 85: 545-562.
Ravines, Rogger and William H. Isbell
1975 Garagay: sitio ceremonial temprano en el valle de Lima. *Revista del Museo Nacional* 41: 253-275. Lima, Peru.
Raymond, J. Scott
1981 The Maritime Foundations of Andean Civilization: A Reconsideration of the Evidence. *American Antiquity* 46: 806-821.
Rowe, John H.
1962 Stages and Periods in Archaeological Interpretation. *Southwestern Journal of Anthropology* 18: 40-54.
Siskind, Janet
1973 *To Hunt in the Morning*. New York: Oxford University Press.
Stephens, S.G. and Michael E. Moseley
1973 Cotton Remains from Archaeological Sites in Central Coastal Peru. *Science* 180: 186-188.
1974 Early Domesticated Cotton from Archaeological Sites in Central Coastal Peru. *American Antiquity* 39: 110-122.
Topic, John R. and Theresa Lange Topic
1983 Coast-Highland Relations in Northern Peru. In *Civilization in the Ancient Americas, Essays in Honor of Gordon R. Willey*, edited by Richard M. Leventhal and Alan L. Kolata, pp. 237-259. Cambridge, MA: University of New Mexico Press and Peabody Museum of Archaeology and Ethnology.
Ugent, Donald, Shelia G. Pozorski, and Thomas G. Pozorski
1982 Prehistoric Potato and Tuber Remains from the Casma Valley of Peru. *Economic Botany* 36: 182-192.
Uhle, Max
1920 Los principios de las antiguas civilizaciones peruanas. *Boletín de la Sociedad Ecuatoriana de Estudios Históricos Americanos* 4: 448-458.
Wilson, David J.
1981 Of Maize and Men: A Critique of the Maritime Hypothesis of State Origins on the Coast of Peru. *American Anthropologist* 83: 93-120.
Williams L., Carlos
1985 A Scheme for the Early Monumental Architecture of the Central Coast of Peru. In *Early Ceremonial Architecture in the Andes*, edited by Christopher B. Donnan, pp. 227-240. Washington, D.C.: Dumbarton Oaks.
Wise, Karen E.
1990 *Late Archaic Period Maritime Subsistence Strategies in the South-Central Andes.* Unpublished Ph.D. dissertation, Northwestern University.