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Following the theoretical perspective of his earlier book, *Ceramic theory and cultural process* (1985), Dean Arnold's ethnoarchaeological study explores the relationships of ceramic production to society and its environment in the Peruvian Andes. The book traces these contemporary linkages through the production, decoration and use of pottery and relates them to the analysis and interpretation of ancient ceramic production. Utilizing an ecological approach within a single community, Arnold expands the scope of previous ceramic theory by focusing on the population as the unit of analysis in production and decoration.

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*DEAN E. ARNOLD* *Wheaton College, Wheaton, Illinois*

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*To my daughters,  
Michelle and Andrea,  
who with my wife are the loves of my life*

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## PREFACE

---

The field work for this book occurred between February and July, 1967 when I lived in the village of Quinua, Department of Ayacucho, Peru. I went to Peru to work with Dr. R. T. Zuidema who had been newly appointed to the faculty of the Department of Anthropology at the University of Illinois, Urbana. Dr. Zuidema was then teaching at the University of Huamanga in Ayacucho and supervised graduate students who were doing research in the Ayacucho area during his last semester there. Several graduate students were involved in this program, but each had his/her own research project in cultural anthropology and/or archaeology.

My original purpose in going to Ayacucho was to obtain comparative data for my ethnographic research in Yucatan which I had carried out in 1965 and 1966. Just before I left for Peru, I had completed a master's thesis relating the selection and use of ceramic raw materials in Mexico to Maya Blue, a unique blue pigment used by the ancient Maya. Blue was the color of sacrifice for the ancient Maya and was used on figurines and ceramic offering vessels. Human sacrificial victims were also painted blue before their beating hearts were ripped out on the sacrificial altar at the Temple of the Warriors at Chichén Itzá. The composition of this blue pigment had been a mystery until the late 1960s when it was identified as a clay-organic complex of indigo and the rare clay mineral attapulgitite (now called palygorskite). Attapulgitite had been identified from Yucatan, but in 1965, my ethnographic work revealed that Ticul potters were using attapulgitite and were aware of its unique properties. Ultimately, I was able to suggest two ancient sites where the Maya may have obtained this rare clay mineral for use in Maya Blue.<sup>1</sup>

The connection between my research and Maya Blue had been stimulated by the discovery that the contemporary potters of Ticul possessed a sophisticated knowledge of their raw materials. The linguistic categories of these materials denoted certain contrasting attributes. Furthermore, raw material selection and use indicated that potters' practical knowledge was based upon characteristics which corresponded to the physical properties of the minerals present in these substances. This correspondence led me to suspect that if Maya categories of ceramic raw materials could be related to physical and/or mineralogical characteristics in a living community, it might be possible to identify communities of potters in ancient ceramics based on the study of paste. Comparative ethnographic data from the Andes would provide cross-cultural support for such an hypothesis and hopefully would show its validity outside of Yucatan. To operationalize this hypothesis in

Peru, I had planned to survey the pottery-making communities in the Ayacucho Valley and collect samples of ceramic raw materials, analyze them using X-ray diffraction, and ascertain whether different communities used mineralogically different materials. If successful, this research would be an important ethnographic test for identifying the source communities of ancient ceramics.

After I arrived in Ayacucho, however, I was not able to implement my original research design. First, I learned that ceramic production in the community of Quinua was so complex and distinct from that of other communities that it merited its own intensive study. Quinua potters utilized a variety of decorative techniques to produce a diversity of vessel shapes which were used for utilitarian and ritual purposes. Other pottery-making communities in the Ayacucho Valley produced only utility wares which were most often undecorated. The unusual character of Quinua pottery was underscored by the fact that it was exported all over the world as an ethnic or third world craft. This market was graphically illustrated to me soon after I arrived in Peru when I remembered having seen a display of Quinua pottery in a department store (Carson, Pirie, Scott and Company) in downtown Chicago a year-and-a-half earlier.

A second factor that influenced the decision to change my research design was the unique character of the culture history of the region. Besides having such unusual and complex ceramics, the village of Quinua was only a few kilometers from the ancient site of Huari, a massive urban settlement which was the capital of one of the largest pre-Inca states in ancient Peru. Huari had been the source of several polychrome styles which were among the most complex in the central Andes and some of the modern Quinua potters live directly across a canyon from the site. The uniqueness of Quinua pottery in the Ayacucho Valley and the closeness of its potters to Huari suggested that there may be an important link between the modern potters of Quinua and the ancient potters of Huari that was not shared by other potters in the valley.

A final reason for changing my original research design was more practical. Another anthropologist (William P. Mitchell) was working in Quinua on a very different project<sup>2</sup> and he offered me a corner of his room to put my sleeping bag. Mitchell ate his meals with a local family headed by a potter and he suggested that I might be able to eat with them as well. The prospect of having my need for food, shelter and informants met so easily was too good to refuse.

With my research site and research topic radically changed, I set about studying pottery production in Quinua. Basic description seemed like a good place to begin, but much to my frustration, I soon discovered that most, if not all, potters were not making pottery. I had arrived in the midst of the rainy season (mid-February). Travel was difficult because of the rain and mud. Rain fell almost every day turning streets into a sea of mud which stuck to my boots like glue and made walking along narrow mountain paths an experience comparable only to mud wrestling. Slipping and sliding my way through the community was a frustrating experience. There was little sunshine; fog and mist often blanketed the area during the day making the climate depressing. The rain also caused frequent landslides, cutting Quinua off

from bus and truck traffic to and from the city of Ayacucho and complicating trips to obtain supplies and mail.

I took some comfort from the fact that the Spanish conquerors had also found the rainy season miserable in Quinua. After founding the first Spanish settlement in the valley on or near the present site of Quinua in January of 1539 (Rivera Serna 1966), they abandoned it in favor of a lower and warmer location across the valley, citing the disagreeable climate as a reason.

Fortunately, Mitchell's host and principal informant at the time was a potter. Unlike most potters who were also agriculturalists and made pots only in the dry season, Mitchell's informant worked in the government-run artisan center for most of the year, but during the summer vacation (the rainy season of January–March), he made pottery in order to make extra money. He was not able to make much pottery during this time. But, even with the pottery he *did* produce, he still had to wait until April to completely dry and fire his vessels. Visits to households of other active potters during this time did not yield much data until late March and early April and even then, few potters were practicing their craft. Furthermore, most Quinua potters were also peasant farmers and needed to work in the fields during the rainy season. Most did not begin making pottery until the harvest was completed in late June which was just before I was scheduled to leave the field.

The early part of my research in Quinua was thus a time of great frustration. Few observations of pottery making were made. For years afterward I felt that much of my field work was a failure because of my inability to gather abundant data on pottery manufacture. These lingering frustrations and disappointments are one of the reasons for the long delay in the publication of this research.

Years after my field work in Quinua I began to evaluate my experiences more objectively. I was preparing some material for publication (Arnold 1972a, 1972b, 1975a, 1975b) and began to reflect on my data and the frustrating experiences of trying to observe pottery making during the rainy season. I began to realize that my research in Quinua had been colored by my field work two years earlier in Mexico which had also occurred during the rainy season. In Yucatan, the mornings were most often bright and sunny with rain falling almost every afternoon. Potters took great precautions to avoid drying and firing their pottery during rainfall. When it rained during firing (and it did frequently), potters also employed safeguards to keep their fuel dry and their kiln hot. Pottery production was thus still possible during the rainy season. Rainy weather did not prevent production, but just complicated it by delaying and/or extending the period necessary for drying and firing.

Pottery production in Quinua, however, was different. While heavy rains only prevented pottery production for relatively brief periods in Yucatan, fog and cool temperatures were the factors which precluded pottery production in Quinua. It was not the amount nor the intensity of the rainfall that was important, but rather the number of daylight hours with rain, cool temperatures and fog. The moisture from fog and rainfall drove the relative humidity so high that pottery and clay could not dry adequately. Cloudiness prevented the radiant energy from the sun from drying the pottery. Pottery that was made during the rainy season risked damage from leaky

roofs and prolonged drying. The climate thus made pottery making extremely difficult, if not impossible, and few ceramics were made during the rainy season. Any vessels that *were* made could not be fired.

Much to my surprise, I discovered that my inability to observe pottery production during the rainy season in Quinua was itself a very important observation. Weather and climate had a significant effect on pottery production. Further, the scheduling of subsistence activities (like agriculture) could preclude ceramic production among part-time household potters who were also farmers. Weather and climate patterns were thus important limiting factors which prevented the development of full-time ceramic specialization in Quinua and were probably important variables in limiting production in areas with a heavy rainy season elsewhere in the Andes as well. These insights changed my view of ceramic production as I saw that what was important was not just production itself, but rather how it was tied to the environment and subsistence. These reflections and the events that stimulated them were pivotal in my thinking at the time and were one of the most significant factors that led to the development of *Ceramic theory and cultural process* (Arnold 1985).

My experience with the unpleasant rainy weather during the first two months of my field work in Quinua was confirmed by data from the weather station in the city of Ayacucho some 15 kilometers to the southwest (Rivera 1971). Ayacucho is lower in altitude and drier than Quinua, but the Ayacucho weather data do provide some indication of the precipitation patterns in Quinua. My perception that it rained almost every day during the first two months of my stay in Quinua was borne out by the meteorological data. During each of the months of February and March of 1967, there were only *two days* without rain in the lower and drier valley to the west (Rivera 1971: 41).

In retrospect, the rainy weather of February and March, 1967 proved to be atypically high for the nine-year period 1962–70 (Rivera 1971).<sup>3</sup> Precipitation for these months was also atypically high for the ten-year period 1961–70.<sup>4</sup> Again, these data came from the city of Ayacucho which was lower and drier than Quinua, but they did reveal an abnormally wet period *even in Ayacucho* during February and March, 1967! My experience with pottery production in Quinua thus could not be generalized to every year, but it *was* clear that weather and climate did affect ceramic production depending on the days with cloudiness, rain, fog, and high humidity.

The significance of the limiting effect of weather and climate on pottery production was reinforced even more during field work in Yucatan during the summer and fall of 1984. During the rainy season (June–September), potters dried their vessels in the sun in the morning. As the sky clouded up in the early afternoon, however, and the first drops hit the roof of the potter's house, family members quickly removed green pots and drying clay from outside the house. Sometimes they arrived too late and pots were destroyed by the rain. At other times, vessels were damaged by movement in and out of the house.

As the rains tapered off in the fall, another problem loomed: hurricanes. During the late summer and fall of every year, low pressure areas arise out of the Caribbean and western Atlantic and head west and north. Few of these ever bring severely

destructive winds and rains to Yucatan like those which occurred with Hurricane Gilbert in September, 1988, but these low pressure cells include massive cyclonic bands of heavy clouds which are hundreds of miles in diameter. These cloud bands often extend over the northern Yucatan Peninsula bringing cool temperatures and heavy cloudiness. One may not see the sun for days on end. Often this cloud cover may be accompanied by constant rainfall over a period of several days.

These weather patterns completely disrupt the pottery-making process and eliminate a week or more of production time. In the fall of 1984, Yucatan experienced a week of cool, rainy weather associated with the periphery of a tropical low pressure area. Household pottery production in Ticul largely stopped during this time. If this weather pattern strikes at an inopportune time in the production sequence, the potter can lose two to three weeks of economically productive time. Normally, potters are on a two-week cycle from the time they obtain the clay until they receive payment for their fired vessels. If these massive tropical depressions occur when the potter needs clay, he must first wait until miners can dig the clay. Since clay is extracted in deep subterranean mines which are subject to the collapse of overburden, clay mining is dangerous during unpredictably rainy weather, and occurs only after the persistent rainy weather passes. The potter must wait until the miners make their weekly clay delivery. He must then dry his clay in the sun for two days even before he can begin making pots. Finally, he faces the problem of drying newly formed vessels in the sun.

For those household potters of Ticul who depend on their craft to make a living, adverse weather is a factor contributing to their poverty. For those on a regular salary who are only inconvenienced by bad weather, it is hard to understand the devastating effect of such delays on a household that requires regular ceramic production to maintain the minimum subsistence level. When potters live on the edge of poverty with no accumulated capital for such low periods, the loss of two weeks of economically productive time can be crippling to a family with several mouths to feed. This problem can only be mitigated by the investment in larger houses, workshops and drying sheds or by being hired as a wage laborer in a workshop that has these facilities.

In Quinua, the weather and climate thus radically affected my research strategy for describing ceramic production. The frustration with the climate in Quinua and the relative dearth of production data collected in the early weeks of my field work led me away from a focus on ceramic production. Early in my research it became clear that Quinua pottery was unique in the valley primarily because it was elaborately decorated. Observation revealed that it was painted in three different decorative schemes and was used locally to celebrate local rituals and to store and carry food, water and other liquids.

In the late 1960s, the archaeological community in the United States had been excited by the work of Longacre (1964) and Deetz (1965) who had tried to demonstrate that designs on ancient pottery could reveal ancient patterns of social organization. Realizing that the link between design and social organization needed to be tested ethnographically, I began to collect design data on every vessel that I



saw in use in Quinua. During the early weeks of my field work, Mitchell told me that land tended to be inherited patrilineally and post-nuptial residence patterns tended to be virilocal. Furthermore, men were potters and learned to make their designs from their father (Mitchell 1991a: 62). Both men and women, however, painted the pottery, but men controlled the content of the designs painted by their wives. Since potters could recognize the author of a pot by its painted style, my residence in Quinua provided a natural opportunity to test the hypothesis that patterns of learning and post-nuptial residence were expressed in the design of the pottery. To adequately test this hypothesis, however, it was necessary to collect provenance information on the potter who made the vessel, how he learned the craft and the location of his residence as well as data on the pottery design itself. Although some of this type of data were collected, it was impossible to collect the same kind of data for every vessel observed. Some vessels were in use and their producer was unknown. Furthermore, given the limitations of climate on ceramic production and the subsequent scheduling conflicts of pottery making with agriculture, the sample size for well-provenanced vessels was too small for analysis. My lack of facility in Quechua further complicated these problems. Informants had said on occasion that each subsection of the community had its own ceramic style, but I was never able to obtain enough design data from known potters in these different subsections to verify such statements empirically.

Nevertheless, the Deetz/Longacre hypothesis was far more complex than just the learning of specific designs by potters who followed a particular inheritance and post-nuptial residence pattern. The Quinua design data indicated that ceramic design was more complex than simple counts of design elements (Longacre 1970; Hill 1970). Moreover, decoration was not limited to a single design zone on a pot (e.g. Deetz 1965). While the pioneering efforts of Deetz, Longacre and Hill have enlarged the horizons of the kinds of inferences that could be made from ceramic analyses, the assumptions about the nature of ceramic design in these works were still untested in 1967. The organization of the Quinua designs revealed that the design structure on ceramic vessels was complex and required attention to a greater variety of variables (like vessel shape, design fields, design zones and symmetry patterns) than just the design elements. When the analysis took these variables into account, important ethnographic insights emerged about the relationship of the designs to the community.

During my research in Quinua, there were about forty households of potters in the community. This number was compiled from my own list of potters, Mitchell's list and from a survey of pottery-making households in the community conducted by the Quinua artisan center. I visited nineteen of these households and my research consisted primarily of questioning potters and observing their work. Most of the interviews and observations took place in the rural *pagos* of Llamahuilca and Lurinsayuq. Few households were visited in the *pago* of Muya. Some observations of pottery making were also made at the artisan center in the village of Quinua. Since the potters at the center utilize several innovations not shared by other Quinua

pottery, this book describes the technology of the artisan center potters separately from that of the rest of the potters in the community. Besides observations of pottery production, I collected samples of raw materials from potters. Sources of clay, temper, and paint were also visited and samples were collected from these locations. Many visits were made to the Quinoa and Ayacucho markets, observing especially the kinds of pottery present and the nature of the transactions used for selling pottery. I also visited the markets in Huanta and Huamanguilla for the same purpose and these visits (as well as those to the Quinoa and Ayacucho markets) enabled me to observe those vessels fabricated and marketed exclusively for local consumption. These observations helped me to see which shapes were actually the most useful and popular with the local populations, and to ascertain the designs that potters used on these vessels. This approach aided me in limiting the focus of my analysis largely to the decorated utilitarian pottery made in Quinoa rather than describing all of the pottery produced there. I also visited the pottery-making areas near Luricocha, the pottery-making *barrio* in the city of Ayacucho and collected as much information as I could about pottery-making communities outside of Quinoa.

I also recorded the designs of many of the vessels which were being sold in the local stores of Quinoa. Most of this pottery did not include the shapes described in this work, but some shapes in these stores were identical to those sold in markets elsewhere in the valley. Hence, vessels from these stores provided information on design supplementary to information obtained from potters or from pottery observed in the local markets.

When I returned to Urbana in 1967, I submitted my samples of ceramic raw materials to Dr. B. F. Bohor of the Illinois Geological Survey (now at the United States Geological Survey in Denver) for analysis by X-ray diffraction. This technique had been used on the ceramic raw materials I collected in Yucatan and had confirmed a relationship between the potter's knowledge of his raw materials and their mineralogical composition. Since the samples from Quinoa were collected by potters using their own selection criteria, I was interested to see if the Quinoa potter's knowledge of his raw materials corresponded to the mineralogy of these substances. In addition to the X-ray diffraction studies, I also separated plastics from non-plastic materials physically by using a 44 micron screen and then examined the larger fraction using a binocular microscope.

An incomplete analysis of the design data served as the basis for my dissertation (Arnold 1970), which contains the raw data. A more thorough analysis began around 1975, was largely completed in 1979 and then reanalyzed in the 1980s. The raw data used for the design analysis in this work can thus be found in my dissertation (Arnold 1970).

It was always tempting to postulate a cultural historical relationship between the modern and ancient potters of the valley. The close proximity of Quinoa to Huari and the unique character of Quinoa ceramics seemed to make historical continuity between the two communities probable. It was equally tempting to relate the modern pattern of ceramic technology to the Inca conquest of the region. During my research in Quinoa, I learned that Tom Zuidema had discovered that the Incas



had placed colonists in the Quinoa region from the town of Acos located southeast of the Inca capital of Cuzco. Since none of the other pottery-making communities in the Valley were known to be colonists from Acos, Zuidema thought that the Acos Indians may have brought knowledge of pottery production with them to Quinoa. Thinking that the modern Quinoa ceramic production may thus have its origin in Acos rather than the ancient site of Huari, I decided, upon the urging of Dr. Zuidema, to visit Acos. I wanted to find out if the people of Acos made pottery and, if so, whether there was any similarity of the Acos pottery to the contemporary pottery of Quinoa. Could the origin of Quinoa ceramic production be found in Acos?

The journey to Acos was a great lesson in Andean ecology and the difficulties that the Incas must have faced in moving their colonists over some of the world's most difficult terrain. Even with modern transportation, the 250 km from Quinoa to Acos was an arduous five-day journey. I traveled overland to Andahuaylas (thirteen hours), then to Abancay (about six more hours), and finally to Cuzco (six additional hours). Another day was required to travel from Cuzco to Acomayo and part of another day from Acomayo to Acos. During the first leg of the trip to Andahuaylas, the bus zigzagged up and down mountains from snowstorms to subtropical river valleys with xerophytic vegetation and groves of bananas and oranges. During the next leg of the trip from Andahuaylas to Abancay, the lights of Abancay twinkled in the valley below hours before we arrived by road. The only part of the journey which was not characterized by up and down travel was the relatively short hour-long trip across the flat Plain of Anta and through the Urubamba/Vilcanota Valley near Cuzco. Not included in the difficulties of such a lengthy trip were the problems with the accoutrements of industrial civilization: a punctured gas tank, an overheated radiator and two flat tires (one with no spare).

After a difficult five-day trip from Ayacucho, I arrived in Acos one afternoon in early June, 1967. Unfortunately, there were no potters in Acos nor in the surrounding area, but there were several archaeological sites nearby. So, I spent three days in the community doing a brief archaeological reconnaissance and collected small surface samples of ceramics.

I have abandoned the possibility of ever finding a direct culture historical link between Quinoa potters, on the one hand, and Acos and/or Huari potters, on the other. Nevertheless, the close proximity of Quinoa and Huari suggest that much could be learned about the ancient ceramic production of the Valley by means of a detailed study of the modern ceramics of Quinoa.

I returned to Quinoa for a very brief visit in June, 1978 and in April, 1979. I had always wanted to return to Quinoa and obtain the provenance data for decorated vessels along with kinship diagrams and residence information that were necessary to adequately test the Deetz/Longacre hypothesis. After the analysis of my 1967 data, the prospect of obtaining adequate data to accomplish this task looked very promising. The aim of the 1978 trip was to briefly assess the situation in Quinoa and lay the ground work to return in the future and collect the data necessary to test the relationship of ceramic design to patterns of learning, residence and descent.

Unfortunately, about a year after my 1979 visit, the political situation deteriorated in the Department of Ayacucho because of the activity by the “Shining Path” guerrilla movement (the *Sendero Luminoso*). A number of attacks were made on villages in the Ayacucho region killing peasants and village officials. These attacks continued for the next several years.<sup>5</sup> Mitchell reported that Quinua itself had been attacked once and a policeman killed.<sup>6</sup> In August of 1984, there was a news report of a mass grave discovered in the town of Huanta 10 km from Quinua (France Presse 1984). Missionary reports listed other massacres not covered by the secular press.<sup>7</sup> Ayacucho has been under a state of emergency for much of this time and further visits to Ayacucho have been very dangerous. Serious ethnographic work has been out of the question. Since this writing project began (about 1982), the situation in Ayacucho (as well as in Peru) has deteriorated and does not look as if it will improve in the near future. Any return to Quinua to complete the work begun in 1967 is extremely unlikely. Therefore, I consider my research in Quinua finished and provide this work as a general summary of my results.

There is a bit of irony for me in the recent guerrilla activity in the Ayacucho area. In early May, 1967, I visited the market in the village of Huamanguilla, about a two-hour walk from the village of Quinua. I had wanted to go to Huamanguilla to observe the pottery sold there and learn about the possible locations of other pottery-making areas outside of Quinua. I had only spent a few minutes in the market and had just begun my observations when a member of *Guardia Civil* (the police force in these rural areas) told me that the commander of the police post wanted to see me. I complied and he escorted me to the police station. Inside, the commander promptly asked me why I was in Huamanguilla. I explained my work, but unfortunately I had forgotten to bring my passport and my letter of introduction from the *Casa de la Cultura* in Lima which introduced me as a student researcher under the supervision of Professor Zuidema at the University in nearby Ayacucho. Because guerrilla activity had occurred in the region two years previously, the commander was concerned that I might be a guerrilla. After emptying my pockets and camera bag at his request, he asked one of his officers whether a jail cell was ready. He deliberated with another subordinate about telegraphing the police in Quinua to verify my claims, but after questioning me further and forbidding me to take photographs, he allowed me to leave. I suspect the absence of automatic weapons in my camera bag and hand grenades in my pockets were the most convincing evidence that I was not a guerrilla, but I shall never forget the lesson I learned: always carry some identification and letters of introduction with you when doing field work in an area where you are not known and then check with the local authorities before proceeding.

This incident has a double irony for me because it is now well documented that the “Shining Path” guerrilla movement had its beginning at the University of Huamanga in Ayacucho.<sup>8</sup> Since I often interacted with University students there, I have occasionally wondered whether any of the students and faculty I knew are now members of the infamous terrorist group. The cautious acts of the Huamanguilla police were perhaps understandable, if not prophetic. The frightening potential

of this situation for foreign ethnographers is borne out by the detention and imprisonment of a North American anthropologist, Cynthia McNamara, in Ayacucho in 1987 (Lopez 1988).

The field research for this monograph was thus done in the pioneering years of ethnoarchaeology before many of the works cited in this volume were published. In 1967, there was a need for ethnographic studies of pottery production since very little of this kind of work had been done. This was before the word “ethnoarchaeology” had been rediscovered<sup>9</sup> and before the current popularity of the subject. The great irony of this work is that although the research was done in 1967, it is more relevant today than it was twenty-five years ago. There is far more interest in ceramic ethnoarchaeology now than there was then. Nevertheless, if I were to study Quinua ceramic production today, I would approach it differently.

It was a struggle to find how best to represent the native words in an ethnography of which the readers may know neither the language nor the culture. In this work, I could have used a Spanish orthography which represents the dominant colonial culture of the Andes. Rather, I have chosen (with a few minor exceptions) to use an orthography that expresses the integrity of the highland people of Peru, the Andean Quechua. The orthography utilized for Quechua words in this work thus corresponds to published orthographies of Ayacucho Quechua that use three vowels rather than the five vowels used in Spanish (Parker 1965; Soto 1976). The “ll” used in Soto’s orthography, however, replaces Parker’s lambda for simplicity of transcription. When Spanish loan words are used, however, the text uses a Spanish orthography.

The field research upon which this book was based was my first experience in the Andes, and like many ethnographic experiences, it changed my life and left unforgettable memories. Through it, I learned much about the Andes and even more about anthropology. There was no greater teacher of Andean ecology than the experience of being there. I shall never forget the azure skies and emerald green fields that I could see from the balcony of my house after the end of the rainy season. Exhausting hikes in the high altitude (sometimes as high as 4,000 meters) and countless vistas of staggeringly beautiful Andean scenery remain a vivid memory. Visits to countless colorful Andean markets and rubbing my body down with DDT powder to keep off the fleas will be etched in my memory forever. The diurnal oscillation of temperature was no more graphically portrayed than when, after waking early one morning to wash and shave, I discovered that the water left outside the night before was frozen solid. And, then, three hours later, I wore only a sweater as I trekked along Andean roads and trails.

Most of all, my experience in Quinua taught me about the holism of anthropology. I learned the importance of refusing to be satisfied with reductionistic and narrow interpretations. Understanding another culture (even though that understanding may be very incomplete) best comes from immersion in a culture through the time-honored and classic ethnographic technique known as participant-observation. This kind of experience combined with an understanding of the environment, history and prehistory of an area provide a holistic perspective

*Preface*

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that is unique in the social sciences and creates special insight into human behavior.

Finally, this work represents a slice of life in Quinua that no longer exists. Cultural evolution, guerrilla activities, population growth, migration, religious change and a cash economy have changed Quinua irreversibly (Mitchell 1991a). Nevertheless, this work has much to say about the relationship of ceramics to environment and society which has relevance beyond Quinua, Ayacucho or Peru.