

The University of Maine

DigitalCommons@UMaine

Andean Past Special Publications

Anthropology

1-16-2024

The Ethno-Categories of a Regional Khipu

John Victor Murra

Monica Barnes

Heather Lechtman

Follow this and additional works at: https://digitalcommons.library.umaine.edu/andean_past_special



Part of the [Archaeological Anthropology Commons](#)

This Book is brought to you for free and open access by DigitalCommons@UMaine. It has been accepted for inclusion in Andean Past Special Publications by an authorized administrator of DigitalCommons@UMaine. For more information, please contact um.library.technical.services@maine.edu.

The Ethno-Categories of a Regional Khipu

John Victor Murra

Andean Past Special Publication 13, 2024



Andean Past Special Publication 13

THE ETHNO-CATEGORIES OF A REGIONAL KHIPU

by **JOHN VICTOR MURRA**

2024

edited by

MONICA BARNES, *American Museum of Natural History & Institute of Andean Research*
and

RUTH ANNE PHILLIPS, *University of Maryland*

with an introduction by

HEATHER LECHTMAN

Massachusetts Institute of Technology (emerita) & Institute of Andean Research

Editorial Advisory Board

SONIA ALCONINI, *University of Virginia & Institute of Andean Research*

RICHARD L. BURGER, *Yale University & Institute of Andean Research*

SUSAN D. DEFANCE, *University of Florida & Institute of Andean Research*

MARÍA GUTIÉRREZ

*Instituto de Investigaciones Arqueológicas y Paleontológicas del Cuaternario Pampeano
(INCUAPA-CONICET-UNCPBA), Universidad Nacional del Centro de la Provincia de Buenos
Aires (UNCPBA), Olavarría, Buenos Aires, Argentina*

JAMES B. RICHARDSON III, *University of Pittsburgh (emeritus) & Institute of Andean Research*

JORDI RIVERA PRINCE, *Brown University*

Founding Editor of Andean Past

DANIEL H. SANDWEISS

University of Maine & Institute of Andean Research

Copyright 2024 by DigitalCommons, University of Maine, Orono

First edition 16 January 2024

ANDEAN PAST SPECIAL PUBLICATIONS constitute a numbered publication series dedicated to research in the archaeology and ethnohistory of western South America.

The Department of Anthropology of the University of Maine is the publishing institution for **ANDEAN PAST SPECIAL PUBLICATIONS**. **ANDEAN PAST SPECIAL PUBLICATIONS** take the “diamond route” to open access, that is, there is no publication fee.



Cover photo: John Victor Murra at the Santa María del Valle site in Huánuco Department, Peru, c. 1965.

ANDEAN PAST SPECIAL PUBLICATION 13

2024

TABLE OF CONTENTS

Editor's Preface by Monica Barnes. 1

Murra at MIT by Heather Lechtman. 7

The Ethno-Categories of a Regional *Khipu* by John Victor Murra. 13

Las etno-categorías de un *khipu* estatal by John Victor Murra. 23

Editorial Notes on the Analysis of the *Khipu* and a Table Reconstructing the *Khipu*. 31

EDITOR'S PREFACE

The work of anthropologist John Victor Murra (1916–2006) has become fundamental to our understanding of Andean societies, yet Murra was uncompromising in the ways he presented his work. He was justly proud of his linguistic ability. His spoken English was excellent, if heavily accented, and, as evinced by this translation, his written English was nearly perfect. He achieved similar levels of competence in Spanish. Emphasizing the need for Anglophone students and researchers to master the languages of the countries in which they worked, Murra sometimes pretended to speak English with difficulty, forcing people whose first language was English to reveal the quality of their own spoken Spanish.

In addition to Spanish, English, Russian, and his native Romanian, Murra knew French and German. For example, he followed political events in France through French language periodicals. However, by his own admission, his efforts to learn Quechua were less successful. This was not for an underestimation of the importance of that language, or for want of trying. Murra's interest and dedication are made apparent by the indices and definitions he created of Quechua words used in the inspection tours (*visitas*) of the Huánuco region (Ortiz de Zúñiga 1967–1972) and in the edition of mestizo chronicler Guaman Poma de Ayala's *Nueva Coronica* that he published with Rolena Adorno and Jorge Urioste (1980). These very useful references are ancestral to the Runa Simi Taqi website, a treasury of Quechua words found in colonial texts <https://runasimitaqi.pl/>.

Murra showcased his linguistic skills and the necessity for researchers to have competence in several languages by designing a Cornell University course on the ethnohistory of the Americas. Prerequisites included reading knowledge of English, Russian, and sixteenth and seventeenth French and Spanish. Murra was confident that

none of the graduate students of that Ivy League university would meet the prerequisites, and his point would be made that North American students were inadequately prepared for research into historical and cultural topics. However, my fellow *Andean Past* editor, Dan Sandweiss, unwittingly called Murra's bluff.

Dan had studied Russian in secondary school. He learned French as a child when his physicist father was working at CERN, in Switzerland, and he also formally studied that language, including Québécois French. He picked up Spanish during fieldwork in Latin America, and his native language is English. Dan tells me that Murra's course was very interesting. Although I read three of the four languages required to take it, Murra had retired from the faculty by the time I arrived to study at Cornell, so I had no opportunity to ask him if we could compromise on the Russian.

Murra's dominant personality distracted scholars from seeing the gaps in his knowledge. Murra seems not to have thought visually, even when topics, such as the quipu, demanded it. His books and articles are rarely illustrated with photographs, maps, or drawings. Although he is famous for an ecological hypothesis (his "Andean verticality" theory), Murra lacked scientific training. This limited his ability to incorporate scientific methods in the four important archaeological projects in which he was involved, in southern Ecuador, the Huánuco region, the Lake Titicaca region, and in Peru's Chíncha Valley (Barnes 2013, 2019).

Murra privileged the publication of his articles in Spanish, in an effort to provide Latin Americans with access to their own history. A result is that one of his most important ones, "Las etno-categorías de un *kipu* estatal" (Murra 1974), was never published in English until now. Somewhat ironically, it has already been pub-

lished in French (Murra 2012:265–271), Italian (Murra 1980), and Romanian (Murra 1987b) although the French translation is without the table that reconstructs the quipu’s information that makes the article fully comprehensible (Murra 1980, 2012: 265–271).

In this article, Murra interprets a quipu (*khipu*) presented in evidence in 1561, at the viceregal court in Lima, then called Los Reyes, by the ethnic Wanka lords of Greater Xauxa who were litigating against the Spanish Crown. The lords hoped to redress the grievances of themselves and their people suffered during a specific fifteen year period of Colonial dominance. The Wanka quipu master read into evidence the information contained in his knot records. This was rendered into Spanish by interpreters, and written into the record by European clerks of the court. Although the quipu itself has not survived, it can be reconstructed from the written record, and that is what Murra did.

Working in the days before the internet made dissemination of one’s work easy, Murra solved the problem of limited editions only available in certain countries by frequently republishing his work (Block and Barnes 2009). He also spent considerable time and money sending photocopies to colleagues and students. I like to think that this project of making one of his most important articles available to a wider audience is in Murra’s spirit.

Murra taught at Vassar College, intermittently, from 1950 until 1963. One of his students there was Heather Lechtman, who has inspired the present publication, and who was one of Murra’s closest colleagues throughout his life. Heather is a professor emerita of materials science at the Massachusetts Institute of Technology (MIT) where she taught many engineering students who did not know Spanish. At Heather’s request, Murra made an abridged and updated translation of “Las etnocategorías . . .”

for their use. We are pleased to make this translation available all who want it, through open access digital publication.

In her introduction, which follows this Preface, “Murra at MIT”, Heather explains how she incorporated this article into her teaching. Her account previously appeared in *Chungara, Revista de Antropología Chilena*, volume 42, number 1 (2010). We are grateful to Héctor S. González Cortez, editor in chief of *Chungara*, for permission to reproduce it here.

Murra’s quipu article was written in 1973 and first published in 1974, before the appearance of important work on quipus by Sergio Barraza Lescano *et al.* (2022), Carrie J. Brezine (Urton and Brezine 2005), Galen Brokaw (2010), Alejandro Chu (2016), Sabina Hyland (2014; Hyland *et al.* 2014), Carol Mackey (Mackey *et al.* 1990), Jeffrey Quilter (Quilter and Urton 2002), Frank Salomon (2004), and Gary Urton (2003, 2017), among others. While some may, therefore, consider it to be outdated, and the publication of a translation to be of limited utility, Heather Lechtman’s experience with her students at MIT demonstrates that many non-Spanish speakers find it illuminating. It is an analysis of a particular quipu and is foundational to later studies of Inca record keeping, and, as such, is of interest to mathematicians, anthropologists, and anyone who wishes to be informed about American Indian cultures. In 2021, I joined a University of Maine seminar that has continued to explore topics at the intersection of equity and archaeological practice (Leclerc *et al.* 2022; Prince *et al.* 2022). One theme of our discussions has been the limitations that language places upon access to information. This translation is a small step towards removing such limitations where Murra’s work is concerned.

Since the 1970s, other scholars have offered interpretations of colonial quipus, preserved, as

was the one from Xauxa analyzed by Murra, as translations of the quipu based testimony of native witnesses recorded in Spanish documents (del Río 1990; Pärssinen 1992), while Murra contemplated other examples (Murra 1987a).

Murra could be cavalier about references. He expected his readers to have a broad familiarity with relevant publications, however obscure or difficult to find, and he often omitted from his bibliographies works that are cited in his texts. At other times he provided only vague references. In cases where he cited a work, but did not include it in his bibliography, I have supplied these references in the English translation. Murra stated that he made his translation in 1990, and it includes references not yet published in 1973 when the original article appeared. One such is John Hyslop's *The Inka Road System* (1984). However, another is Terry Y. Levine's *Inka Storage Systems* published in 1992.

To increase comprehensibility and to indicate points upon which opinions have shifted in the half century since Murra first published the Spanish language version of this article, I have added editor's notes interspersed with Murra's original notes. When my notes require support, I have embedded references within them, to make it clear that these are my references, not Murra's. However, apart from small changes in punctuation and spelling to make the translation conform better to *Andean Past* house style, and to make it internally consistent, I have not altered it. The table was translated by David Fleming, with my assistance, because Murra apparently did not translate it himself. I have translated, in the form of footnotes to the Spanish version, a few paragraphs and notes that Murra omitted from his English translation. We have conformed to Murra's word choices as expressed in the body of the article wherever possible.

Murra's connection to Vassar College ended in the early 1960s. To meet the Peruvian government's institutional requirements for his "A Study of Provincial Inca Life" project, centered on the important site of Huánuco Pampa, Murra relied on his affiliation with the Institute of Andean Research, a professional organization founded to coordinate the fieldwork of scholars at leading universities and museums (Daggett 2009, 2021). Murra was loyal to the IAR, serving as its president, and claiming it as his sole affiliation, even when he had the right to others, including that of professor emeritus of Cornell University. It is, therefore, fitting that this publication carry the IAR logo.

I thank Juan Antonio Murro, Chief Curator of the Dumbarton Oaks Museum and Carla Galfano, Museum Registrar and Collections Manager, Dumbarton Oaks, for the photograph of an Inca quipu that illustrates this translation. I also thank Bruce Owen for bibliographic and critical suggestions.

Monica Barnes
Jersey City, New Jersey
16 January 2024

REFERENCES CITED

- Barnes, Monica
2013 John Victor Murra, arqueólogo accidental: De Cerro Nariño a Huánuco Pampa. In: *Historia de la arqueología en el Perú del siglo XX*, edited by Henry Tantaleán and César Astahuamán. Lima: Instituto Francés de Estudios Andinos, *Actes & Memoires* 34:551–574.
- 2019 Intervenciones de John V. Murra en la arqueología andina. *Boletín de Etnohistoria* 24, diciembre. Lima, Peru: Grupo de Trabajo en Etnohistoria, Facultad de Ciencias Sociales, Universidad Nacional Mayor de San Marcos, pp. 9–12.
- Barreza Lescano, Sergio, Rodrigo Areche Espinola, and Giancarlo Marcone Flores
2022 By Stones and by Knots: The Counting and Recording of Chili Peppers Stored During the Inca Occupation of the Guarco Administrative Center of Huacones-Vilcahuasi, Lower Cañete Valley, Peru. *Andean Past* 13:221–264.

- Block, David and Monica Barnes
2009 Bibliography of Works by, in Honor of, and about John Victor Murra. *Andean Past* 9:49–64.
- Brokaw, Galen
2010 *A History of the Khipu*. Cambridge: Cambridge University Press.
- Chu, Alejandro
2016 Incahuasi, Cañete. *Andean Past* 12:172–178.
- Daggett, Richard E.
2009 Introduction to “Experiences with the Institute of Andean Research: 1941–42 and 1946” by Gordon R. Willey. *Andean Past* 9:305–312.
- 2021 *Julio C. Tello and the Institute of Andean Research 1936–1943*. *Andean Past Monograph* 5.
- Del Río, Mercedes
1990 Simbolismo y poder en Tapacarí. *Revista Andina* 8:77–113.
- Guaman Poma de Ayala, Felipe
1980 [c. 1615] *El primer nueva corónica y buen gobierno*, edited by John Victor Murra and Rolena Adorno with Quechua translations by Jorge Urioste. Colección América Nuestra 31, 3 volumes. México, D.F.: Siglo XXI.
- Hyland, Sabine
2014 Ply, Markedness, and Redundancy: New Evidence for How Andean Khipus Encoded Information. *American Anthropologist* 116(3):643–648.
- Hyland, Sabine, Gene A. Ware, and Madison Clark
2014 Knot Direction in a Khipu/Alphabetic Text from the Central Andes. *Latin American Antiquity* 25(2):189–197.
- Hyslop, John
1984 *The Inka Road System*. San Francisco and New York: Academic Press.
- Leclerc, Elizabeth, Emily M. Blackwood, Kit M. Hamley, Frankie St. Armand, Heather A. Landázuri, Madeleine Landrum, Jordi A. Rivera Prince, Monica Barnes, Kristina Douglass, Del Río, Mercedes
1990 Simbolismo y poder en Tapacarí. *Revista Andina* 8:77–113.
- María A. Gutiérrez, Sarah Herr, Kirk A. Maasch, and Daniel H. Sandweiss
2022 Creating an Equity-Based Seminar in Content and Format: A Case Study and Call to Action. *The Archaeological Record* 22(3):9–13, 18.
- Levine, Y. Terry, editor
1992 *Inka Storage Systems*. Norman and London: University of Oklahoma Press.
- Mackey, Carol J., Hugo Pereyra, Carlos Radicate, Humberto Rodríguez, and Oscar Valverde, editors
1990 *Quipu y yupana: Colección de escritos*. Lima: Consejo Nacional de Ciencia y Tecnología.
- Murra, John Victor
1974 Las etno-categorías de un khipu estatal. In: *Homenaje a Gonzalo Aguirre Beltrán*, edited by Roberto Bravo Garzón, Volume 2, pp. 167–176, plus foldout chart. México: Universidad Veracruzana and Instituto Indigenista Interamericano.
- 1980 *Formazioni economiche e politiche nel mondo andino: Saggi di etnoistoria*, translated by Ana María Soldi. Turin, Italy: Guilio Einaudi.
- 1987a ¿Existieron el tributo y los mercados antes de la invasión europea? In: *La participación indígena en los mercados surandinos*, edited by Olivia Harris, Brooke Larson, and Enrique Tandeter, pp. 51–61. La Paz: Ceres.
- 1987b *Civilizație inca: Organizarea economică a statului incaș*. Bucharest: Editura Științifică și Enciclopedică.
- 2012 *Formations économiques et politiques du monde andin*. Translated by Sophie Fisher and with contributions by Maurice Godelier, Ana María Lorandi, José Matos Mar, Ruggiero Romano, Frank Salomon, and Nathan Wachtel. Lima: Instituto Francés de Estudios Andinos and Paris: la Maison des Sciences de l’Homme.
- Ortiz de Zúñiga, Iñigo
1967-72 [1562] *Visita de la provincia de León de Huánuco en 1562*. 2 volumes. Huánuco, Perú: Universidad Nacional Hermilio Valdizán, Facultad de Letras y Educación.
- Pärssinen, Martti
1992 *Tawantinsuyu: The Inca State and Its Political Organization*. Helsinki: Societas Historica Finlandiae, *Studia Historica* 43.
- Prince Rivera, Jordi A., Emily M. Blackwood, Jason A. Brough, Heather A. Landázuri, Elizabeth L. Leclerc, Monica Barnes, Kristina Douglass, María A. Gutiérrez, Sarah Herr, Kirk A. Maasch, and Daniel H. Sandweiss
2022 An Intersectional Approach to Equity, Inequity, and Archaeology: A Pathway through Community. *Advances in Archaeological Practice* 10(4):382–296.
- Quilter, Jeffrey and Gary Urton
2002 *Narrative Threads: Accounting and Recounting in Andean Khipu*. Austin: University of Texas Press.
- Salomon, Frank
2004 *The Cord Keepers: Khipus and Cultural Life in a Peruvian Village*. Durham, North Carolina: Duke University Press.
- Urton, Gary
2003 *Signs of the Inka Khipu*. Austin: University of Texas Press.
- 2017 *Inka History in Knots*. Austin: University of Texas Press.

Urton, Gary and Carrie J. Brezine

2005 Khipu Accounting in Ancient Peru. *Science* 309:1065–1067.

Various

2019 *Written in Knots: Undeciphered Accounts of Andean Life*. Exhibition catalog, Dumbarton Oaks Museum. Washington, D.C.: Dumbarton Oaks Research Library and Collection.

MURRA AT MIT¹

Heather Lechtman

lechtman@mit.edu

Massachusetts Institute of Technology

Of all Murra's publications, there are two articles that I have always loved the best: "Las etnocategorías de un *kipu* estatal" (1975) and "Cloth and Its Functions in the Inca State" (Murra 1962). I assign these articles as required reading to undergraduate students in two of the courses I teach at MIT: "The Ancient Andean World" and "Materials in Human Experience".

The students in my classes are primarily engineers; others study physics or biology, architecture or economics. Some are from Mexico, and occasionally there are a few from the Andes. For the most part, they do not read Spanish.

Many years ago I asked Murra if he would translate the "Etnocategorías" article into English so that I could give it to my students to read. He made the translation, but did not publish it. It is the only translation of "Etnocategorías" into English I know.

I love this article of Murra's because, after all, how is one to teach a group of engineering students about the meaning of ethno-categories when they have never attended a class in cultural anthropology? In "The Ancient Andean World", the students read "Ethno-categories" after we have spent weeks discussing Andean microenvironments, vertical complementarity, and Murra's model of the vertical archipelago; the boundless varieties of maize and Andean potatoes, and the property of phenotypic plasticity that governs the flexibility of indigenous

Andean biota; agriculture and cloth as dual forms of wealth in the Inka state; fibers as the materials through which major engineering achievements were carried out in the Andes.

The students then read "Ethno-categories", and suddenly all the parts assemble into a structure that makes sense, a hierarchical set of cultural categories that integrate biological, economic, and technological orders of experience and of social commitment. And that order is assembled, expressed, and curated on a *kipu* through the manipulation of its fibers.

Whereas the "Ancient Andean World" focuses on the Andes in prehistory, the class on "Materials in Human Experience" covers a much broader intellectual, geographic, and temporal landscape. The class is something of an anthropology of technology, in which the sphere of technologies it covers is restricted to the management and manipulation of natural materials and the processing of those materials to transform them into items of culture.

The special attention of the class to the exploitation, processing, and design of materials results from the fact that the class is offered by MIT's Department of Materials Science and Engineering (DMSE). The fundamental anthropological structure of the subject matter, provided by the DMSE faculty members who teach it—Dorothy Hosler, a Mesoamericanist and Heather Lechtman, an Andeanist—is communi-

¹ This article was first published in 2010 in *Chungara: Revista de Antropología Chilena* 42(1):19–23 in a memorial section dedicated to John Victor Murra who died in 2006.

cated through a series of case studies. Each case study explores the utilization of a specific type of engineering material by a specific society known to us primarily through archaeological research.

Like many engineering classes at MIT, “Materials in Human Experience” includes weekly laboratory (practicum) sessions during which students examine the properties of the material that the case study presents and discover how those properties were managed by the society in question.

In the spring of 2006, one of the engineering materials the class examined was fibers. The use of fiber technologies by the Inka state provided the case study context for our dual engineering-anthropological approach.

The students chose to construct a “giant” *kipu* as the laboratory component of their case study.² They used as their model the information on the table Murra published in “Etnocategorías” which tabulates the items read into a court record in 1561 by a *kipukamayoq* [*kipu* expert] from Hatun Xauxa. The Xauxa *kipu* recorded both the items that the community of Hatun Xauxa provided to the invading Spaniards over a period of fifteen years, as well as the items that the Spaniards looted from the Xauxa imperial warehouses during that same period.

The students built their *kipu* to record the information that documents the first historical encounter between Xauxa and the Spaniards: the entry of Francisco Pizarro and his army into Xauxa in 1533. They designed the *kipu* to hang, on exhibit, on a sun-bathed wall in the MIT building that houses the Department of

Materials Science and Engineering. The width of the wall allowed them to reconstruct only the first six categories of pendant cords on the original Xauxa *kipu*—a total of 24 cords—read into the court record by the Xauxa *kipukamayoq* in 1561: I (men and women); II (camelids); III (cloth); IV (maize, quinoa, potatoes); V (sandals, cargo straps, horse harnesses); VI (ceramic vessels).

The main cord of the students’ *kipu* measures about 24 feet (7.3 m) in length; the pendant cords hang from a height of about 15 feet (4.6 m) (Figure 1). We purchased cotton knitting yarn of colors often used in Inka *kipus* and plied the yarns to make the cords: 2-ply for the pendants and 3-ply for the primary cord. Sometimes the students plied a pendant cord from yarns of two different colors.



Figure 1: Heather Lechtman (left) and students examining the *kipu* on display at MIT.

The entire *kipu* was made by hand. Pendant cords representing goods provided to the Spaniards by the community at Xauxa were plied Z; goods looted by the Spaniards were plied S. Pendant cords representing goods provided were attached to the primary cord by a “half hitch recto” knot; goods looted were attached in the opposite direction, by a “half hitch verso” knot. The students recorded the numbers on each

² In 2003, the Museo Chileno de Arte Precolombino constructed a truly “giant” *kipu* for the exhibit of Andean prehistoric *kipus* that the museum mounted to coincide with the Congreso Internacional de Americanistas that took place in Santiago de Chile in July of that year.

pendant cord using only the variety of knots found on Inka *khipus*.

At the end of the semester, the students hung their *khipu* with great pride. At the inauguration of the exhibit, they and I discussed with our audience Murra's "Etnocategorías" article, how he had interpreted and structured the Xauxa *khipu* from the court document, and the bases on which the students had made decisions about the construction of their *khipu* in order to communicate the information given in evidence by the *khipukamayoq* from Xauxa.

In the fall semester of each academic year, MIT celebrates Parents Day, when the parents of the undergraduate students arrive to spend a weekend at the Institute. Every year the students who were enrolled in "Materials in Human Experience 2006" bring their parents to see their *khipu* which still hangs on its sun-bathed wall. They show off their *khipu* with the same sense of pride with which they made it.

In my opinion, "Cloth and Its Functions in the Inca State" is the best article Murra wrote—his tightest argument, the most compelling, the most powerful. It is a classic in the anthropological literature of the Andes.

In "Materials in Human Experience" we discuss Andean cloth and cloth production as only one manifestation of the Andean commitment to fibers as the quintessential material for use in solving fundamental engineering problems. Fibers for battle-slings as aggressive weapons and padded garments as defensive armor; fibers for the transport of goods-carrying cloths and *costales* [sacks]; fibers for rope; fibers for reed boats; fibers for roofing thatch; fibers for *khipus*; fibers for long span suspension bridges; fibers for clothing. The Inka state inherited over 4,000 years of expertise in the manipulation of fibers and in the development of sophisticated fiber technologies by peoples throughout the

Andes. It was obvious that the state's census-taking tool would be an implement of fibers, just as it was evident that only a flexible fiber catenary could span the deep ravines of the Khapaq Ñan [Great Road].

One morning in the early spring of 2007, the faculty scheduled to teach "Materials in Human Experience" met, over coffee, to decide upon the case studies and laboratory projects for the class. Once again we selected fibers as an engineering material to be explored and Tawantinsuyu as the cultural and political entity within which that exploration would be developed. We were at a loss, though, to define an appropriate student laboratory project, especially in light of the great success that continued to surround the giant *khipu* of 2006.

Professor Hosler came up with the solution. Why not an Inka-style fiber suspension bridge that the students would build and install on the MIT campus, she suggested! We all agreed with enthusiasm to this ambitious but, we thought, manageable project. In the end, it was ambitious, designed and executed entirely by fourteen students in the class. For the four-week period that it hung and swayed gently across a dry moat on campus, the *Chaka Stata* [bridge]³ was the most beautiful and unexpected construction to grace the world's premier educational institution of engineering and science (Figures 2, 3).

Like the giant *khipu*, the students constructed the *Chaka Stata* by hand. As their model, they used the suspension bridge renewed annually by the communities near Huinchiri, in highland Peru. In 1997 a crew from the PBS

³ The students installed their *chaka* across a dry moat on the MIT campus that is located in the plaza adjoining a building known as the Stata Center. The suspension bridge bears the name of that building and plaza.

television program NOVA⁴ filmed the three-day sequence of operations involved in gathering local grasses, spinning and plying grasses into rope, twisting ropes into primary cables, braiding primary cables into final cables, and installing the bridge over the Apurímac gorge at Huinchiri.



Figure 2: MIT students constructing the Chaka Stata.



Figure 3: The Chaka Stata.

As a substitute for grasses, the students used twine made from sisal (agave/cabuya) fiber. We purchased 50 miles (80.5 km) of twine that they plied, twisted, and braided into four cables for the footpath and two cables for the handrails. Each final cable measured 175 feet (53.4 m) in length, long enough to cross the 70 foot (21.4 m) span of the dry moat with sufficient excess cable to secure the ends to the two stone or concrete ramparts that they had built.

For four weeks, anyone walking across the MIT campus stopped at the *chaka*. No one passed it by. Everyone smiled. It was beautiful: perfectly designed, perfectly engineered, perfectly executed. The students formed teams; each week one team was responsible for tightening the footpath cables to maintain the appropriate degree of sag. Many people walked across the *chaka*. Most just stopped and gazed.

In 2006, during a visit to John Murra in Ithaca, New York, I told him about the giant MIT *kipu* constructed on the basis of his “Etnocategorías” article and that we planned a public inauguration of the exhibit. He responded: “Shouldn’t I be there?” By then he was confined to bed.

Murra never saw photos of the *Chaka Stata*. He would have been delighted by the international coverage of the students’ Andean bridge,

⁴ NOVA is a television program devoted to science. It is sponsored by WGBH, a TV station in the United States that is part of the Public Broadcasting System.

which appeared on the front page of *The New York Times*, *Science Times* (both 8 May 2007) and in *El Comercio*, Lima (22 May 2007). And we both would have smiled, contemplating the sixteen year old Vassar College physics student whom he taught in 1952, guiding young MIT engineers in the communal construction of an Inka *chaka*.

July 31, 2007

REFERENCES CITED

- Murra, John V.
1962 Cloth and Its Functions in the Inca State. *American Anthropologist* 64:710–728.
1975 Las etnocategorías de un khipu estatal. In: *Formaciones económicas y políticas del mundo andino*. Lima: Instituto de Estudios Peruanos, pp. 243–254.



Figure 4: A color banded, all cotton Inca quipu in the Dumbarton Oaks Collection, Washington, D.C. (PC.WBC.2016.071). See Various 2019 for a fuller description. Photograph courtesy of Dumbarton Oaks.

THE ETHNO-CATEGORIES OF A REGIONAL KHIPU⁵

John Victor Murra

This article was first written for a volume honoring Gonzalo Aguirre Beltrán upon his retirement from the directorship of the Instituto Indigenista Interamericano and its journal, *América Indígena*. His directorship was one of the most creative in the history of that institution. Dr. Aguirre was able to transform a moribund, bureaucratic backwater into an active publishing house translating such classics as Fred Eggan's *The Social Organization of Southwestern Pueblos*, as well as a University of Cusco thesis by Gabriel Escobar Moscoso and another by Jorge Flores Ochoa, indispensable for future ethnographic work in the Andes. The version presented here was translated and shortened by the author in 1990.

⁵[*Editor's note*: The work in honor of Gonzalo Aguirre Beltrán, to which Murra refers, is a three volume set entitled *Homenaje a Gonzalo Aguirre Beltrán*, edited by Roberto Bravo Garzón and published by the Instituto Indigenista Interamericano in Mexico City between 1973 and 1974. Murra's contribution appears in Volume 2, pages 167–176. It was republished in Murra's initial collection of his essays *Formaciones económicas y políticas del mundo andino* (Lima: Instituto de Estudios Peruanos, 1975: 243–254) which was also published in an Italian translation by AnaMaría Soldi, *Formazioni economiche e politiche nel mondo andino: Saggi di etnoistoria* (Turin, Italy: Giulio Einaudi, 1980) and in a French translation by Sophie Fisher, *Formations économiques et politiques du monde andin* (Paris: École des Hautes Études en Sciences Sociales with the Maison des Sciences de l'Homme, 2012: 265–271). "Las etnocategorías de un *kipu* estatal" was also republished in *El mundo andino: Población, medio ambiente y economía* (Lima: Pontificia Universidad Católica del Perú and Instituto de Estudios Peruanos, 2002:248–260).

Murra is referring to Eggan's *Social Organization of the Western Pueblos*, published by the University of Chicago Press in 1950. Escobar Moscoso's doctoral dissertation, *Sicaya: Problems of Cultural Change in a Community in the Central Highlands of Peru* was accepted by Cornell University in 1968. I have not been able to find a Spanish version of this work. Murra may have had a licenciatura thesis in mind. Jorge Flores Ochoa received his doctorate from the Universidad Nacional San Antonio Abad del Cusco in 1967. I have not been able to find a specific reference to his thesis, but it seems to have been published in 1968 by the Instituto Indigenista Interamericano as *Los pastores de Paratía: Una introducción a su estudio*.]

The Indians of this land keep accounts and keep track of the things they give their lords . . . through what they call *quipos* and everything they have given from way back they also record on their *quipos*

And this witness knows that the said *quipos* are very accurate and true because at many and different times this witness has compared some of the accounts he has handled with Indians, of items given or owed him and those which he has given and he has found that the *quipos* kept by these Indians were very accurate⁶

Interest in the *kipu*⁷ has revived recently after several decades during which museums and private collectors kept accumulating archaeological specimens looted from desert sites.⁸ Such hoarding does not necessarily lead us beyond the suggestions made years ago by Leland Locke (1923, 1928⁹); progress came only recently when

the Aschers conducted an exhaustive survey of museum collections on several continents.¹⁰

Recent studies of the *kipu* as an object liable to seriation (Radicati 1965) or as a system of mathematical relations (Ascher and Ascher 1969, 1972) suggest that we may now be ready to utilize new procedures to explain the *kipu*'s multiple uses.

In this essay I offer the first results of an ethnological¹¹ study of an actual *kipu* presented in evidence in 1561 at the viceregal court of Los Reyes by the lords of Greater Xauxa against the Crown as part of litigation to redress many grievances of these first allies of the Europeans. As part of the litigation, the Wanka *kipukamayuc*¹² read into evidence the sworn information contained in their knot records; this was translated by sworn interpreters and the record was filed by the European clerks of the court.¹³ No one objected to the presentation of such Andean evidence (see table).

This information indicates that for at least the first thirty years after the European invasion, the *kipukamayuc* continued recording the results of transactions concerning the Xauxa lords—with an emphasis in the present record on what was “given” to the Europeans who passed through Xauxa, located on the main Inka highway.¹⁴ Implicit in the data is that records were

⁶ Statement by Pedro de Alconchel, who “entered this kingdom with the said marquis Pizarro” and “was the trumpet of the said marquis” (see Espinoza Soriano 1971–72:361, 365; see also Lockhart 1972:481).

⁷ [Editor's note: Murra preferred the spelling *kipu* to quipu, the already established English language rendering. He considered the former to be a more accurate reflection of Quechua pronunciation and to be more respectful to indigenous people. A committed anti-fascist, Murra may not have been aware that the *kipu* spelling arose, at least in part, out of an early twentieth century *indigenista* attempt to make Quechua orthography conform more closely to fascist aesthetics and to reflect the perceived “affinal” nature of certain cultures such as the Incan, Germanic, and Tartar ones (see Luis Valcárcel's *Tempestad en los Andes*, first published in 1927 and never out of print since then).]

⁸ [Editor's note: Murra was strongly opposed to the illegal, for profit excavation of archaeological sites, and took whatever opportunities came his way to express his disapproval.]

⁹[Editor's note: Should be 1927.]

¹⁰ [Editor's note: since then, quipu survey has continued. <https://www.fieldguide.com> (Accessed 18 September 2023).]

¹¹ [Editor's note: This would, perhaps be better stated as an ethnohistorical study.]

¹² [Editor's note: *Khipukamayuc* were the officials responsible for creating and maintaining records using *kipu*.]

¹³ See Waldemar Espinoza [Soriano] 1971–72.

¹⁴ John Hyslop has recently surveyed this section of the highway; see his 1984 study.

also kept of whatever was stored in the close to 1,000 warehouses outside the city, plus in those assigned to the ethnic lords and to peasant storage.¹⁵

As can be seen on the enclosed table, which covers only the first 15 years after the disaster at Cajamarca,¹⁶ a *khipu* reflected the alien pressures on the Andean economy from the very first. The guards at the state warehouses at Xauxa enumerated whatever they “gave” to their European allies, and on separate strings, whatever these soldiers “*ranchear*”,¹⁷ on their own initiative. As early as 1537, five years after the invasion, the evidence expands to record the handing over of items of European use or inspiration: “seats for buttocks”, lead for the artillery, “Castilian” hens, lances, or rope sandals.¹⁸ The

ethnologic classification recorded by the *khipu kamayuq* was enlarged to include items unknown before 1532. It is interesting to note *where* the strings enumerating a new commodity were fitted among the Andean ethno-categories.

Before such “loose leaf” colonial additions, there was an ethnographic, Andean order: as can be seen from the table, potatoes are always “listed” after the camelids; sandals came before pottery jars, and these precede charcoal or dried fish. Vertical lines separate ethno-categories usually copied from the sworn statement.¹⁹

¹⁵ Terry Levine. [Editor’s note: This paragraph deviates considerably from the published Spanish version. There Murra cites Espinoza Soriano (1971–1972) and notes that Craig Morris made archaeological studies of the state storehouses at Huánuco Pampa and those of communities in the Huallaga Valley. The reference to Levine (1992) that appears in the translation is an update.]

¹⁶ [Editor’s note: The “disaster at Cajamarca” refers to the killing of Atahualpa. After his forces slew his half brother Huascar, his chief rival in the civil war that followed the death of their father, Huayna Capac, Atahualpa had the best claim to be the *sapa* Inca, the Inca ruler. Atahualpa’s death ended effective Inca rule, except in small refugia.]

¹⁷ [Editor’s note: *ranchear* in the sense of “to loot” is, at present, a Mexican usage.]

¹⁸ [Editor’s note: Murra does not give a reference for this 1537 report. It is not clear whether at the time he made this translation Murra had seen additional information on quipu ordering that allowed him to state that ordering did not vary. It is also unclear whether all the items reported in 1537 that Murra considers to have been for European use or of European inspiration really are so. “Lead for the artillery” certainly is. However, “seats for buttocks”, *tiyanakuna* (Quechua) or *bujo*, were important prehispanic ceremonial items, at least in the northern Andes (see Colin McEwan, *Sillas de poder: Evolución sociocultural en Manabí, costa central del Ecuador*. In: *5000 Años de Ocupación–Parque Nacional Machalilla*, edited by Presley

Norton and Marco Vinicio García. Quito: Ediciones Abya-Yala {1992} and Colin McEwan, *Seats of Power: Axiality and Access to Invisible Worlds*. In: *Unknown Amazon*, edited by Colin McEwan, Cristiana Barreto, and Eduardo Neves, pp. 176-197 {2001}. London: British Museum Press {2001}. Pedro Pizarro reported that Atahualpa sat on a stool called a *duo* or *buho* made of fine wood (Pizarro {1921} [1571]:223, facsimile on demand edition of *Relation of the Discovery and Conquest of the Kingdoms of Peru*, translated by Philip Ainsworth Means, 2 volumes, Documents and Narratives Concerning the Discovery and Conquest of Latin America 4. New York: Cortes Society). It is possible that chickens were introduced to South America, probably through Pacific migrations, before the arrival of Africans and Europeans in the western Hemisphere (see Alice A. Storey, José Miguel Ramírez, Daniel Quiroz, David V. Burley, David J. Addison, Richard Walter, Atholl J. Anderson, Terry L. Hunt, J. Stephen Athens, Leon Huynen, and Elizabeth A. Matisoo-Smith, Radiocarbon and DNA Evidence for a Pre-Columbian Introduction of Polynesian Chickens to Chile, *PNAS* 104(25):10335–10339 {2007}). Lances of various sorts were used by both Incan and Spanish armies.

¹⁹ [Editor’s note: This paragraph has, essentially, been rewritten by Murra. The original could be translated as “There is little doubt about this hierarchy. It is reflected in the systematic ordering in which the information appears. The table reproduces this information faithfully: potatoes always appear after llamas. The vertical lines suggest my separation of the categories. Future research will negate or explain, or better explain these separations.”]

The vertical axis, labeled from *a* to *r*,²⁰ records the sequence of 19 historical events listed by the Xauxa informants in their testimony. As Espinoza Soriano (1971–72:29–30) has noted, this list is incomplete—various defeats and confrontations have been omitted or neglected. What matters for our understanding of Andean accounting is that the 19 events are listed and were read into the record in strict historical order—more than arithmetic could be conveyed by the *kipu*.

The first category (I: 1 and 2) of treasure handed over to the invaders dealt with human beings. Sometimes the *kipu* distinguished between the numbers of men “for their service” from women “for their provisioning”; at others this distinction was not drawn. At times the record separated the “armed” men from those who were bearers. The latter can appear in two separate places on the knot record: either early, among “men given” or at the very end, among goods handed over upon leaving Xauxa, usually on their way south, towards Cusco and the Collao.²¹

The number 266, its half (133), and their multiples played a role in Wanka social organization which, so far, we have been unable to fathom. It appears frequently in this account, usually in a military context (Espinoza Soriano 1971–72:31), but it is unlikely that we will understand its significance until we know more about Wanka social organization. There were apparently three phratries,²² but this may well be

a change imposed by the Inka: in addition to the usual “upper” and “lower” moieties,²³ there was also a “greater” Xauxa, a third, apparently equivalent subdivision. Line *g* on the historical axis notes that once the siege of Lima by the Inka²⁴ was betrayed, Francisco Pizarro’s avenging gang was “given” 266 bearers and 266 soldiers.²⁵ Earlier, the notorious Alonso de Alvarado had used another 532 “in chains”, even though the Wanka were supposed to be the Europeans²⁶ allies.

Most of such “bearers” or “soldiers” never returned²⁷ because they were kept by their European “allies”; others because they died in the wars. Still others hid from their lords enforcing European exactions. If we accept the ap-

related clans; each retains its separate identity, but all feel some sort of group identity shared with the others within its phratry.]

²³ [Editor’s note: In anthropology, a moiety is one of two hereditary groups in which a society is divided for ritual, social, and/or purposes of marriage]

²⁴ [Editor’s note: In August 1536, Incan warriors marched on the city of Lima under the command of Manco Inca’s general, Quizo Yupanqui, with orders to kill every Spaniard in the newly founded capital. The siege failed.]

²⁵ [Editor’s note: This note does not appear on line “g”.]

²⁶ [Editor’s note: Murra does not reference this statement. In his frequent references to “Europeans”, Murra ignores those participants in the conquest of the Americas who were of African descent.]

²⁷ [Editor’s note: The published Spanish version includes the following note: “Felipe Guacra Paucar; hijo del señor urin wanka, logró convencer a Felipe II para que en Barcelona emitiera una cédula real que ordenaba a la Audiencia en Lima “{. . .} que vos mandasedes y compelaes a tales indios ausentados y huidos del Valle que regresen a el {. . .}” (Espinoza 1971–1972:396). That is: “Felipe Guacra Paucar; son of the lower Wanka lord, managed to convince Felipe II to issue a royal decree in Barcelona that ordered the Audiencia in Lima “to command and compel the absent and fugitive Indians of the valley to return.”]

²⁰ [Editor’s note: This should be “a to q”. In the table Murra employs the Spanish letters “ch” and “ll”. Possibly Murra intended to amend the table for English readers, but did not do so.]

²¹ [Editor’s note: The table refers to porters and servants (*cargadores* and *yanacanas*).]

²² [Editor’s note: In anthropology, a phratry is a unilineal descent group composed of a number of supposedly

proximate figure of 27,000 households for 1532, the loss for the ethnic group of so many times 266 young people during the first 15 years must have been catastrophic (Espinoza Soriano 1971–1972:174). The debate about Andean populations (Dobyns 1966; Lipschutz 1966; Smith *et al.* 1970) did not have access to the Wanka figures.

The second category (II: strings 3, 4, and 5) records figures about camelids; together with the first entry they appear to enumerate a macro-category of “living creatures”.

Within this second category, the *khipu* enumerated on separate cords the “sheep or ewes”²⁸ from “native rams for food”.²⁹ Espinoza Soriano (1971–72:94–95) accepts this distinction in Castilian³⁰ as if it referred to the animals’ gender;³¹ he notes that at the time of the invasion, in 1533, Francisco Pizarro had “received” about ten times more “male” animals than “females”. But if we compare strings 3 and 4, we note not only that the overall quantity of beasts decreases over time, but that the proportion changes, with more “ewes” being turned over than “rams”. Assuming that “sheep and/or ewes”

referred to llamas, then “rams or lambs” were actually alpacas.³²

In 16th century Castilian, “sheep of the land”, cord 3, was frequently used for llamas of both genders.³³ Since cord 4 refers literally to food animals, and we know the gastronomic preferences of the Europeans, this strengthens the notion that cord 3 (“ewes” or “sheep”) referred to the burden bearers, llamas. See also cords 39 and 40, where camelids were handed over “when leaving”, with the obvious implication that the “sheep” being loaded were llamas.

Such uncertainty in the translation of terms used by the European scribe when he recorded the testimony of Andean informants appears frequently and slows down our understanding of the categories actually used by the *khipukamayuc* in their mother tongues.³⁴ Our analysis is necessarily tentative since the enumeration reaches us only through a multiple filter: the interests of the Wanka lords, the “translation” of the sworn interpreter, the errors of the scribe. Each of these can distort the quantitative evidence and frequently hide from us the true meaning of what had been enumerated, particularly the equivalences, since the weights and measures

²⁸ [Editor’s note: “Ovejas de la tierra” in the Spanish original.]

²⁹ [Editor’s note: “Carneros para su comida” in the Spanish original.]

³⁰ [Editor’s note: Murra uses “Castilian” to mean the form of Spanish spoken in the kingdom of Castile, in central Spain, and to refer to the people, animals, and objects of that part of the world. In the Andes it is common to refer to the Spanish language as *castellano*.]

³¹ [Editor’s note: This translation of the word “sexo” was made before social thinkers began to distinguish between chromosomal sex and the cultural constructs of gender.]

³² [Editor’s note: Murra seems to have been mistaken here because string 5 enumerates “obejas, carneros, pacos rancheados”, indicating that ewes (obejas) and rams (carneros) are distinct from pacos (alpacas).]

³³ Domingo de Santo Tomás (1560:f.81v; 1951:180) offers the earliest, though unsatisfactory translation. See González Holguín ([1608] 1952:611) who translates llama as “sheep of the realm”.

³⁴ [Editor’s note: Although Murra appears to be privileging Quechua in this article, here he tacitly acknowledges that *quipu* can be read in more than one language and that Andean record keepers were not necessarily Quechua speakers in all instances.]

recorded were frequently European.³⁵ Whenever the scribe does use an Andean weight or measure this is as recorded on the table.

A unique detail: the record transcribed at the Lima viceregal court in 1561 was not the first mention of this Xauxa *khipu*. Fifteen years earlier, Pedro Cieza de Leon had been told that such accounts had been kept at Xauxa; he had asked to see the record and noted that separate knot strings were kept of what had been turned over by the storehouse custodians to the invaders from what these had plundered (“rancheado”) on their own. When did the record keepers begin to add the separate cords? Was this a pre-European distinction? One notes that the quantities looted are frequently greater than those “turned over”. Plainly, like other forms of bookkeeping, the *khipu* allowed both the exaggeration and the hiding of resources. But if such opportunities to falsify without detection had existed, it is notable that the cords of plundered animals or things receive so little attention after the initial contact.³⁶

One further possibility which deserves verification would be to consider the alternative that cords 3 and 4 or 6 and 7 enumerated resources removed from state-wide, Inka warehouses located in Wanka territory, while cords 5 and 8 kept track of ethnic, local goods. Apparently state warehouses continued to receive goods destined for Tawantinsuyu, the Inka state,

³⁵ The only aboriginal measure recorded was the *yzanga*, a small basket used for fruit and vegetables. See also use of this measure in the inspection of Iñigo Ortiz 1967–1972 [1562]—see index of Quechua words at the end of each volume. [Editor’s note: In the Spanish version Murra states that Espinoza Soriano (1971–1972:31) also notes that the aboriginal measure *putre* was used for dried pacay pods and for peanuts.]

³⁶ This would imply that the 25,000 or more animals “taken” by the younger Almagro should have been knotted onto cords 3 and 4, since the informant separated “lambs” from “sheep”.

for at least 15 years after its fall: lawyer Juan Polo de Ondegardo, acting as quartermaster of the crown troops, fed 2,000 European soldiers assembled at Xauxa in 1547 to fight rebel Gonzalo Pizarro. How and how long such state warehouses continued to be filled even after the collapse of Cusco rule is still not understood.

When we shift from living creatures to things (categories III, IV, V, and VI) we will not be surprised to find textiles in first place.³⁷ Food followed, with maize preceding Andean crops. The quantities recorded express both European preferences for cereals as well as the high status of maize in the Andes. This does not explain why the staple food—Andean tubers—should appear in last place and in such relatively small quantities. Even if we accept as fact the European army’s preference for grains, we still recall that the bulk of the armies, drafted by whatever faction, were made up of Andean folk. Is this a confirmation of the chroniclers’ claim that the Inka army expected to be fed on prestigious maize?³⁸

Macrocategory V brought together items made of sisal fibers and included after 1537, a European artifact, the *alpargata*, a rope sandal. European horse trappings appear soon after.

Pottery makes up group VI. Archaeologists may find of use the distinction drawn in Andean taxonomy between ethno-category 21, “*chamelicos, porongos, escudillas*”, and cord 22, “*cantaros, puños,*³⁹ *tinajas, ollas*”.⁴⁰ Craig Mor-

³⁷ See Murra 1962, reprinted in 1989.

³⁸ See Murra 1960.

³⁹ [Editor’s note: *Puños* are not mentioned on the table.]

⁴⁰ String 21 lists 2 Andean containers: the dictionary of González Holguin (1952 [1608]) lists *chhamillcu*—a clay cooking pot (p. 93) and *puruncu*—a long-necked drinking vessel (p. 298). The *escudilla* was a large soup bowl. String

ris's excavations of state warehouses at Huánuco Pampa (1967) have confirmed that pottery was widely used for storage by the Inka state for items which in other latitudes are kept in sacks, boxes, and other non-ceramic containers.

I cannot be sure that these last four macro-categories (textiles, agricultural products, sisal objects, and pottery) did not constitute a conscious grouping, in that order. I suggest it [is] relying on the strings that follow immediately (nos. 25, 26, and 27), which separate them from categories VIII and IX, and thus appear to form an intrusive group VII.

This brought together “Castilian hens”, their eggs and “partridges”. The first two record items unknown before 1532 which have been placed in a gallinacious⁴¹ context—there is some debate as to the degree of domestication of the partridge. Category VII entered Andean bookkeeping in 1537, five years after the invasion.⁴²

This leaves only two more groups: VIII—which brought together non-cultivated vegetation and which required only marginal processing: firewood and charcoal, grasses and straw.⁴³ VIII could also be broken down into

22 distinguishes the above from “large, narrow mouthed pitchers”, kettles, and large jars. *Puno* has so far remained untranslated.

⁴¹ [Editor's note: *Gallina* means “hen” in Spanish. Therefore, Murra is referring to chickens and to birds similar to chickens, including partridges.]

⁴² Maria Rostworowski and Toribio Mejia Xesspe assure me that the partridge was indeed domesticated in the Andes. [Editor's note: María Rostworowski Tovar de Diez Canseco (1915–2016) was a prominent ethnohistorian of the Andes. Archaeologist Toribio Mejia Xesspe (1896–1983) was a close associate of Julio C. Tello, one of the founders of Peruvian archaeology.]

⁴³ [Editor's note: The manufacture of charcoal, in fact, requires careful processing. Straw must also be skillfully processed into rope, thatched roofs, mattress stuffing, and

wood products brought from the valleys vs. high altitude forage. Such a distinction may also have prevailed in group IX: if guayabas and maize for beer brewing were valley products, salt and dried fish came from the highlands.⁴⁴

Beyond all this new information about the *khipu*, we note many questions left unanswered:

1. Quantities are usually stated in alien weights and measures (*hanegas*,⁴⁵ *libras* [pounds]) or in vague and unprecise terms;⁴⁶ we learn less than we expected from reading the *khipu* of Xauxa. The study of Andean weights and measures initiated by María Rostworowski (1962) and by Emilio Mendizábal (1971) progresses much too slowly.⁴⁷

2. Some goods, probably a significant part of what was stored at Xauxa, are not listed on the *khipu* transcribed at court. Thus, weapons appear only in 1542, and then in a completely European context, when Vaca de Castro⁴⁸

other products.]

⁴⁴ Among the Chupaychu, both salt and fish came from the highest inhabited tiers. See Ortiz de Zúñiga (1967–1972 [1562], Volume 1).

⁴⁵ [Editor's note: This is an alternative spelling of the Spanish measure “*fanega*”, in this context an old measure of dry capacity used primarily for agricultural products such as grain. In Castile, it was equivalent to about 55.5 liters.]

⁴⁶ [Editor's note: These include *cestillas* (small baskets) and *cargas* (loads).]

⁴⁷ [Editor's note: In the Spanish version of this article Murra notes that even when Andean measures are mentioned, their capacities cannot be calculated.]

⁴⁸ [Editor's note: Murra does not reference this statement. Cristóbal Vaca de Castro, in office from 7 August 1542 until 14 May 1544, was sent by Holy Roman Emperor Charles V to Peru in 1540, with the title of *juez pesquisitor* (special investigator) to restore order between the factions of Gonzalo Pizarro and Diego Almagro the Younger. Upon

ordered the manufacture of lances, along with the hoarding of lead and copper. Hunting for an explanation, we note that the European chroniclers describing Tawantinsuyu assert that each ethnic group showed up for military service bearing their own traditional weapons and led by their ethnic lords. However, such an explanation contradicts another principle of Andean economics: all *mit'a* services to the state were performed with tools provided by the beneficiary.⁴⁹ The question as to where among the *kipu*'s ethno-categories they placed weapons remains unanswered.

the death of Francisco Pizarro, while Vaca de Castro was still en route to what is now Peru, he raised a sizeable army and used it to defeat Almagro. He worked to curb abuses.]

⁴⁹ In our excavations at Huanúco Pampa we were hoping to establish the administrative area governed from that center by mapping the proveniences of the potteries brought to that city by the people serving their turns there. Survey and excavations demonstrated that there was no basis in the Andean economy for such hopes. All of the pottery used in the city was of Inka, if not Cusco, manufacture. [Editor's note: Murra had overall responsibility for excavations at Huánuco Pampa in 1965 (John V. Murra and Gordon J. Hadden, Informe presentado al Patronato Nacional de Arqueología sobre la labor de limpieza y consolidación de Huánuco Viejo {20 de Julio a 23 de noviembre de 1965}. *Cuadernos de Investigación Antropología* 1:129–144. Huánuco, Perú: Universidad Nacional Hermilio Valdizán {1966}). Afterwards they were taken over by Craig Morris, who had excavated the storehouses at Huánuco Pampa under Murra's aegis (Morris 1967). Morris was in charge of archaeological work at Huánuco Pampa from 1971 until 1981 (Thomas F. Lynch and Monica Barnes, Edward Craig Morris October 7, 1939–June 14, 2006, *Andean Past* 2007:63). Afterwards, a number of Peruvian archaeologists worked at the site including Alfredo Bar Esquivel (Excavaciones en el ushnu de Huánuco Pampa, *Cuadernos del Qhapaq Ñan* 4{4}:10–35), José Luis Pino Matos (Observatorios y alineamientos astronómicos en el Tampu Inka de Huánuco Pampa. *Arqueología y Sociedad* 15:173–190), Carlo José Ordóñez Inga (La arquitectura inca de los Subsectores IIB y VB de Huánuco Pampa: Excavación, identificación y registro de sus aspectos constructivos y estrastructurales. *Revista Huacaypata* 4{10}:6–23), and Luis Enrique Paredes.]

Other commodities missing from the *kipu* of 1561 were coca-leaf and chili pepper—both indispensable in ordinary Andean life.⁵⁰ We know⁵¹ that the Wanka had their own “islands” and coca-leaf gardens on the Eastern slopes. One dare not guess if such omissions are due to Andean or European reasoning. Since the *kipu* here analyzed reflected diverse European pressures, we can assume more than one tactical consideration behind the mission.

Is it too much to expect that in the future we will dare compare the many archaeological *kipu*, now imprisoned in museums worldwide, with the kind of historical records analyzed here?

REFERENCES CITED

- Ascher, Marcia and Robert Ascher
1969 Code of Ancient Peruvian Knotted Cords (Quipus). *Nature* 222:527–533.
- 1972 Numbers and Relations from Ancient Andean Quipus. *Archive for History of Exact Sciences* 8(4):288–320.
- Cieza de Leon, Pedro
1946-47 [1553] *Primera parte de la crónica del Perú*. In: *Historiadores primitivos de Indias*, edited by Enrique de Vedia Goossenes. Biblioteca de Autores Españoles 26. Madrid: Atlas.
- 1967 [1553] *El señorío de los incas*. Lima: Instituto de Estudios Peruanos.
- Dobyns, Henry F.
1966 Estimating Aboriginal American Population I: An Appraisal of Techniques, with a New Hemisphere Estimate. *Current Anthropology* 7:395–416.

⁵⁰ [Editor's Note: For an example of *kipu* use in accounting for chili peppers see Sergio Barraza Lescano, Rodrigo Areche Espinola, and Giancarlo Marcone Flores, By Stones and by Knots: The Counting and Recording of Chili Peppers Stored During the Inca Occupation of the Guarco Administrative Center of Huacones-Vilcahuasi, Lower Cañete Valley, Peru. *Andean Past* 13:221–264 (2022).]

⁵¹ Andres de Vega (1965 [1582]).

- Espinoza Soriano, Waldemar
1971-72 Los huancas aliados de la conquista . . . *Anales Científicos de la Universidad del Centro del Perú* 1:9–407.
- González Holguín, Diego
1952 [1608] *Vocabulario de la lengua general de todo el Perú llamada lengua qquichua o del Inca*. Lima: Instituto de Historia.
- Hyslop, John
1984 *The Inka Road System*. San Francisco and New York: Academic Press.
- Levine, Y. Terry, editor
1992 *Inka Storage Systems*. Norman and London: University of Oklahoma Press.
- Lipschutz, Alejandro
1966 La despoblación de las Indias después de la conquista. *América Indígena* 26:229–247.
- Locke, L. Leland
1923 *The Ancient Quipu or Peruvian Record*. New York: The American Museum of Natural History.
- 1927 *A Peruvian Quipu*. Contributions from the Museum of American Indian, Heye Foundation. New York: Museum of the American Indian Heye Foundation.
- Lockhart, James
1972 *The Men of Cajamarca*. Austin: University of Texas Press.
- Mendizábal, Emilio
1971 *Estructura y función en la cultura andina: Fase inka*. Lima: Universidad de San Marcos.
- Morris, Edward Craig
1967 *Storage in Tawantinsuyu*. Ph.D. dissertation, University of Chicago.
- Murra, John V.
1960 Rite and Crop in the Inca State. In: *Culture in History: Essays in Honor of Paul Radin*, edited by Stanley Diamond, pp. 33–47. New York: Published for Brandeis University Press by Columbia University Press.
- 1962 Cloth and Its Functions in the Inca State. *American Anthropologist* 64(4):710–728. Updated and republished in 1989 in: *Cloth and Human Experience*, edited by Annette B. Weiner and Jane Schneider, pp. 275–302. Washington, D.C.: Smithsonian Institution Press.
- Ortiz de Zúñiga, Iñigo
1967-72 [1562] *Visita de la provincia de León de Huánuco en 1562*. 2 volumes. Huánuco, Perú: Universidad Nacional Hermilio Valdizán, Facultad de Letras y Educación.
- Radicati de Primeglio, Carlos
1965 La seriación como posible clave para descifrar los quipos extranumerales. *Documenta* 4:112–215 (Lima).
- Rostworowski de Diez Canseco, María
1962 Pesos y medidas en el Perú prehispánico. *Actas y Trabajos: Segundo Congreso Nacional de Historia*, Volume 2, pp. 103–115.
- Santo Tomás, Domingo de
1951 [1560] *Lexicon o vocabulario de la lengua general* . . . Lima: Universidad de San Marcos.
- Smith, C. T., G.H.S. Bushnell, Henry F. Dobyns, Thomas McCorkle, and John V. Murra.
1970 The Depopulation of the Central Andes in the 16th Century. *Current Anthropology* 11:353–464.
- Vega, Andres de
1965 [1582] La descripción que se hizo de la provincia de Xauxa. In: *Relaciones geograficas de Indias. Perú 183*, edited by Marcos Jiménez de la Espada, pp. 166–172. Atlas: Madrid.

LAS ETNO-CATEGORÍAS DE UN KHIPU ESTATAL

John Victor Murra

Los yndios desta tierra tienen cuenta y razón de las cosas que dan a sus señores [. . .] por quipos que ellos llaman y todo lo que han dado de mucho tiempo atrás lo tienen asimismo en sus quipos. E saue esta testigo que los dichos sus quipos son muy ciertos e verdaderos porque este testigo muchas y diversas veces ha cotejado algunas cuentas que ha tenido con yndios de las cosas que le han dado e le han debido e les ha dado e ha hallado que los quipos que tienen los dichos yndios eran muy ciertos. . . . (Declaración de Pedro de Alconchel, quien “entro en este reino con el dicho marques Pizarro” y “fue trompeta del dicho marques”)⁵²

En los últimos años ha revivido el interés por el *kipu*, después de varias décadas en las cuales museos y coleccionistas particulares han ido acumulado más y más ejemplares arqueológicos pero sin que, desde los ensayos de Leland Locke (1923, 1928), se hicieran mayores progresos en su interpretación.

Los recientes estudios del *kipu* como objeto serializable (Radicati 1965) o como sistema de numeración y de relaciones matemáticas (Asher y Asher 1969, 1972), indican que nos encontramos en condiciones de usar nuevos procedimientos para la explicación de sus múltiples funciones.

En este ensayo ofrezco los primeros resultados del estudio etnológico de un *kipu* presentado en 1561 por los señores de Hatun Xauxa a la Audiencia de Los Reyes, como parte de un largo

reclamo publicado recientemente por Waldemar Espinoza (1971–1972). Los *kipukamayoq* leyeron la información contenida en sus nudos y la traducción fue transcrita por los escribanos de la Audiencia. No hubo ningún inconveniente en recibir tal información como parte de la evidencia en el pleito.

La información jaujina, publicada en los Anales científicos de la Universidad del Centro (1971–1972:201–387), indica que los *kipu kamayoq* continuaron anudando lo que sus señores entregaban a las autoridades coloniales durante las primeras décadas después de la invasión. Esto supone que también registraban lo que seguía recibiendo en los depósitos, tanto estatales, como en aquellos de los señores y de los de *sapsi*.⁵³

Como se verá en el cuadro, que no trata sino de los primeros 15 años después del desastre de Cajamarca, el *kipu* como instrumento de contabilidad reflejó, desde muy temprano, las presiones foráneas sobre la economía andina. Los guardas de los depósitos estatales de Xauxa enumeraban en hilos separados lo que estos soldados “rancheaban”. Además, desde 1537 hay evidencia de entregas de objetos de uso o inspiración europea: “sillas de caderas”, plomo para la artillería, gallinas “de Castilla”, picas o alpagatas. La etnoclasificación usada por los *kamayoq* se amplía para dar cabida, en las cuen-

⁵² Espinoza Soriano 1971–1972:365–367.

⁵³ Craig Morris ha estudiado arqueológicamente los depósitos estatales en Huánuco Pampa y los de *sapsi*, “de comunidad”, campesinos, en el valle del Huallaga. [Editor's note: In his English translation Murra omits this note about Craig Morris's work on storehouses and, instead, cites Levine (1992), which includes a chapter by Morris.]

tas, a bienes desconocidos antes de 1532. Lo interesante es observar la ubicación de los nuevos hilos de contabilidad en la jerarquía de las etnocategorías andinas.

Hay poca duda de la existencia de tal jerarquía; se refleja en la ordenación sistemática en la cual aparece la información. El cuadro reproduce fielmente este ordenamiento: las papas aparecen siempre después de las llamas;⁵⁴ las líneas verticales sugieren mi separación de las categorías;⁵⁵ futuras investigaciones rechazarán o explicarán mejor estas separaciones.

En el eje vertical se consigna la secuencia cronológica de 19 acontecimientos recordados por los informantes (líneas a-q). La lista leída en Lima estaba incompleta, como ya lo ha indicado Espinoza (1971–72:29–30); varios choques y derrotas han sido ocultados o subestimados, pero las 19 situaciones que he escogido para el cuadro incluyen casi todos los momentos críticos de la historia colonial más temprana.

La primera categoría (I: 1 y 2) de riquezas entregadas al invasor comprende los seres humanos. Algunas veces el *khipu* distingue el número de varones “para su servicio” del de las mujeres “para su proveimiento”; en otras ocasiones la distinción no es clara. El cuadro refleja también las situaciones donde las cuerdas separan a los hombres “armados” de los “de carga”.⁵⁶ Estos

⁵⁴ Las excepciones son muy pocas y aparecen indicadas como notas marginales al cuadro. [Editor’s note: This note does not appear in the English translation. It could be translated as “There are very few exceptions and these are indicated in marginal notes in the notebook.”]

⁵⁵ Las categorías del *khipu* han sido numeradas por orden con cifras arábigas. Las más llevan números romanos. [Editor’s note: In the original table, Murra’s postulated ethno-categories are indicated by horizontal lines above the items recorded, not by vertical lines.]

⁵⁶ [Editor’s note: The table states that 266 “varones armados de carga” (men armed with cargo, or perhaps,

últimos aparecen varias veces no sólo en las primeras cuerdas, sino también al final del *khipu*, donde se anudaba lo que se entregaba “a la salida” o lo que “llevaron consigo para el camino”.⁵⁷

El número 266, su mitad 133 y sus múltiplos jugaban en la organización social *wanka* un papel que todavía no hemos descifrado. Aparecen muchas veces en el expediente, particularmente en el contexto militar (Espinoza 1971–1972:31), pero es probable que su importancia se ampliará cuando conozcamos mejor la estructura social y demográfica de las tres hermanas *wanka*. En la línea g del cuadro se ve que Pizarro recibió 266 cargadores y 266 soldados cuando fue al Cusco,⁵⁸ después de levantarse el sitio de Lima. Alonso de Alvarado (final de la línea f) llevó 532 de sus aliados “en cadenas”.

La mayoría de estos “llevados” no regresaron jamás,⁵⁹ sea porque fueron convertidos en yanacunas de los europeos, sea porque murieron tardía (Vega 1965: t. I, 167) en cuanto a que la población *wanka* había sido de una magnitud de alrededor de 27,000 unidades domésticas, antes

loaded with cargo) were given to Pizarro.

⁵⁷ No he podido encontrar una explicación de por qué estos datos se anudaban algunas veces en la cabeza del *khipu* y otras al final. Mucho depende de si tal separación es pre o posteuropea. [Editor’s note: This note does not appear in the English translation. It could be translated as “I could not find an explanation for why this data is sometimes added at the beginning of the *khipu* and sometimes at the end. A great deal depends on whether this separation is pre- or post-European.”]

⁵⁸ [Editor’s note: Line “g” of the table states only that Pizarro received 266 men with cargo. See note 56.]

⁵⁹ Felipe Guacra Paucar; hijo del señor *urin wanka*, logró convencer a Felipe II para que en Barcelona emitiera una cédula real que ordenaba a la Audiencia en Lima “[. . .] que vos mandasedes y compelais a tales indios ausentados y huidos del Valle que regresen a el [. . .]” (Espinoza 1971–1972:396).

de 1532, la pérdida para la etnia de tantas veces 266 jóvenes en sólo quince años debe haber sido catastrófica (Espinoza 1971–1972:174). El debate que se ha iniciado recientemente sobre la población en los Andes, deberá tomar en cuenta el *khipu* jaujino (Dobyns 1966; Lipschutz 1966; Smith 1970).

El segundo reglón del *khipu* trata de auquénidos (II; hilos 3, 4 y 5) y parece formar, con el primero, una etnocategoría mayor: la de los seres vivientes.

El *khipu* enumera en cordones separados las “obejas” y los “carneros de la tierra para su comida”.⁶⁰ Espinoza acepta que esta división se refiere al sexo de los animales y anota que, en 1533, Francisco Pizarro recibió casi diez veces más machos que hembras, lo que se puede interpretar como una medida prudente de conservación (1971–1972:94–95). Pero si seguimos comparando los hilos 3 y 4, notamos que no sólo las cantidades de ambos animales decrecen rápidamente, sino que la proporción cambia, siendo mayor el número de “obejas” entregadas. Esto podría explicarse por las preferencias gastronómicas europeas, particularmente si notamos que en las horizontales *b* y *ch*, los carneiros han sido reemplazados por “corderos”.

Existe otra explicación posible. En el siglo XVI, “obejas de la tierra” (cuerda 3) era el término que se usaba con frecuencia para referirse a las llamas de ambos sexos.⁶¹ Explícitamente, en el hilo 4, se trata de animales “para su comida”; ¿dónde se enumeraban las bestias de carga? Sugiero que la cuerda 3 podría referirse a los animales de carga, en contraste con los de carne,

⁶⁰ [Editor’s note: The table actually says “ovejas de la tierra” and “carneros para su comida”.]

⁶¹ Domingo de Santo Tomás (1951:f.81v; 1951:180) dice: “oueja–animal conocido–llama o paco o guaca o guanaco o vicuña”. [Editor’s note In his English translation, Murra adds a definition by González Holguín.]

en la cuarta. Tal explicación recibe alguna confirmación comparando las cuerdas XI, 39 con 40, donde se enumeran los camélidos entregados “a la salida” de Xauxa: allí las “obejas” predominan sobre los “corderos”.⁶²

Tal inseguridad en la traducción del término castellano usado por el escribano, para encabezar lo enumerado, se repite con frecuencia y hace difícil la interpretación de las categorías usadas por el *khipukamayoq*. El análisis resulta tentativo ya que la enumeración llega hasta nosotros tamizada por diversos filtros: los intereses de los señores *wanka*, la traducción del “latino”⁶³ y los eventuales errores del escribano. Los cambios que con ello se producen tergiversan y ocultan con frecuencia el significado verdadero de lo enumerado y particularmente las equivalencias, ya que los pesos y medidas registrados son europeos.⁶⁴ Cuando en contados casos el escribano transcribe la palabra andina original (*azua*, *yzanga*), ésta aparece como tal en el cuadro.

⁶² El doctor Arturo del Pozo, antes de la Universidad del Cusco y ahora de la Católica de Lima, ha sugerido en comunicación personal que el hilo 4 se refiere a alpacas, cuya carne se usa en la alimentación humana con mayor frecuencia que la de llama. [Editor’s note: This footnote is omitted from the English translation. It could be translated as: “Doctor Arturo del Pozo, formerly of the University of Cusco {Universidad Nacional San Antonio Abad del Cusco} and now of the Catholic University in Lima {Universidad Pontificia Católica del Perú} has suggested in a personal communication that string 4 refers to alpacas, whose meat is consumed by people more frequently than that of llamas.”]

⁶³ [Editor’s note: In the English version of this article, Murra translates “latino” as “sworn interpreter”. In the sixteenth and seventeenth centuries a “latino” was generally an Indian who spoke, read, and wrote Spanish.]

⁶⁴ La única medida que aparece sin traducir es la *yzanga*, un cestillo usada para frutas y legumbres (véase la nota 16). Espinoza menciona también el *putre* (1971–1972:31) que se usaba para “pacaes secos y maní”. Véase también el uso de la *yzanga* en la visita de Iñigo Ortiz 1967 y 1972, índice de palabras quechuas al final de cada tomo.

Ya en 1547, Cieza de León había observado, durante su paso por el valle del Mantaro (1967: lib. II, cap. XII, p. 36), que los *khipu kamayoq* contabilizan aparte lo que se había entregado el ejército invasor y lo que “rancheaba” de los depósitos. El *khipu* de 1561 confirma tal separación. ¿Cuándo se añadieron tales hilos de lo “rancheado” al ramal principal? ¿Tuvieron antecedentes prepizarrinos? Se observará en el cuadro que las cantidades saqueadas eran más grandes que las “entregadas”. Es obvio que tal contabilización, aparte, permite exageración y hasta encubrimiento de recursos. Pero si hubo tal oportunidad de falsificación sin verificación, es notable que las cuerdas de las cosas o animales rancheados reciban tan poca atención después del primer impacto.⁶⁵

Una interpretación que merece verificarse, podría considerar la posibilidad de que los hilos tres y cuatro o seis y siete enumeraban recursos sacados de los depósitos estatales, allí donde las cuerdas cinco y ocho registraban lo extraído de la hacienda étnica local. Es obvio que a pesar de la decapitación política y administrativa del Tawantinsuyu, los depósitos estatales siguieron llenándose con la *mit'a* por lo menos durante los primeros 15 años de la conquista, ya que Polo con lo que encontró almacenado en Xauxa logró abastecer a los dos mil soldados de La Gasca durante siete semanas.⁶⁶ Los mecanismos que después de 1532 se usaron para asegurar tal entrega de recursos a los depósitos son desconocidos, pero existe la posibilidad de que los seño-

res *wanka* aseguraran las entregas para proteger sus recursos personales.

Cuando pasamos de los seres vivientes a las cosas (III, IV, V, y VI) no resulta extraño encontrar en primer lugar a los tejidos.⁶⁷ Siguen los alimentos cultivados en los que la cuerda del maíz precede a todos los demás cultivos andinos. Las cantidades expresan, a la vez, las preferencias europeas por los cereales, como también la alta valorización que se tenía del básicos—los tubérculos—ocupen el último lugar y aparezcan en cantidades relativamente modestas. Aun aceptado el hecho de que el ejército europeo prefería los granos, sabemos que el grueso de las tropas estaban conformado por aliados andinos, ¿es ésta una conformación de las aseveraciones de los cronistas de que el ejército incaico esperaba alimentarse con el prestigioso maíz?⁶⁸

La categoría V reúne objetos confeccionados con fibras de cabuya e incluye desde 1537 un artefacto europeo, la alpargata. Las jáquimas, sueltas y demás aderezos del caballo aparecieron años más tarde.

La cerámica se enumeraba en sexto lugar. Los arqueólogos quizás encuentren útil la diferenciación que hace el *khipu* entre la etnocategoría 22, “chamelicos, porongos, escudillas”, y la cuerda 21, “cantaros, puños, tinajas, ollas”. Las excavaciones de los depósitos estatales de Huánuco Pampa (Morris 1967) han indicado que la cerámica se usaba para almacenar productos que

⁶⁵ Quizás los 25 mil y más animales llevados por Almagro el Mozo debería anudarse a las cuerdas 3 y 4, ya que el informante separa los “corderos” de las “obejas”.

⁶⁶ Polo estimaba que había todavía 15,000 “hanegas” de alimentos en los depósitos reales (1917b:77). [Editor's note: Here La Gasca is mentioned, but not Gonzalo Pizarro. In the English translation Gonzalo Pizarro is mentioned but not La Gasca. Polo is not referenced in Murra's bibliography.]

⁶⁷ Véase en “La función del tejido en varios contextos sociales y políticos”. [Editor's note: This was published in John V. Murra, *Formaciones económicas y políticos del mundo andino*, pp. 145–170. Lima: Instituto de Estudios Peruanos (1975) and in other places.]

⁶⁸ Véase el ensayo “Maíz, tubérculos y ritos agrícolas”. [Editor's note: This was published in John V. Murra, *Formaciones económicas y políticos del mundo andino*, pp. 45–57. Lima: Instituto de Estudios Peruanos (1975) and in other places.]

en otras latitudes se guardan en cajas, sacos, petacas y otros recipientes que no son de barro.

No puedo afirmar que las cuatro etnocategorías anteriores (tejidos de lana, alimentos cultivados, objetos de cabuya y objetos de cerámica) formaran una especie de macrocategoría reconocida. Sugiero esta agrupación tentativa basándome más en la ubicación de las tres cuerdas que les siguen (25, 26 y 27) y les separan de las categorías VIII y IX.

En la categoría VII se anudaban “gallinas de Castilla”, sus huevos y perdices. Por lo tanto, dos de los hilos enumeraban bienes que no existían antes de 1532 y que hacen su aparición cinco años más tarde, junto con las alpargatas. Que los hilos de las gallinas estén al lado del de las perdices tiene su lógica, pero es significativo anotar que las dos aves pertenecen a dos etnocategorías andinas muy distintas.

Claude Lévi-Strauss ha sugerido en el primer tomo de su *Mythologiques* (1964) que en todas las sociedades es útil contrastar “lo cocido” con “lo crudo”. En el mundo andino, la gallina como todo lo criado y lo cultivado forma parte de “lo cocido”; la perdiz es “lo crudo”.

En la economía andina tal diferenciación es fundamental, puesto que no había tributo en los Andes. Los ingresos del Estado consistían en la disponibilidad de la energía de sus habitantes y el acceso a sus parcelas, rebaños, andenes y otros bienes de los que el Cusco se apropió. Las autoridades políticas, y por extensión el Tawantinsuyu, no tenían derecho sobre “lo cocido”, lo cultivado y criado por la unidad doméstica. No así “lo crudo”: manadas de vicuñas, huevos de patos silvestres de las islas del Titicaca, plumas recogidas por los muchachos pastores; tales especies sí se entregaban al poder.

Las perdices y las gallinas pertenecían por lo tanto a dos etnocategorías andinas contrasta-

bles.⁶⁹ En la declaración de los *khipukamayoq* de 1561 las encontramos juntas. Sin otra justificación, la ubicación de este manojo de tres cuerdas avícolas me parece anómala. Sugiero que el grupo de hilos VII ha sido intercalado en este punto del *khipu* de 1561 en algún momento tardío, después de 1532. Al contemplar el contable andino su ramal principal y buscar dónde ubicar los nuevos hilos, sugiero que lo hizo al final de una macrocategoría (III a VI, inclusive).⁷⁰

⁶⁹ Ya escrito este artículo, varios colegas, entre ellos María Rostworowski y Antonio Rodríguez Suysuy, me han indicado que las perdices se criaban y siguen criándose en estado semidomesticado. Sus huevos, por ejemplo, se incuban por gallinas. Si en la economía del Tawantinsuyu la perdiz se clasificaban como “cocida”, su ubicación en la *khipu* al lado de la gallina carece de novedad.

⁷⁰ [Editor's note: The above passage, beginning with “Claude Lévi-Strauss . . .” and ending with “una macrocategoría” is not in Murra's English translation. It could be translated as follows: “Claude Lévi-Strauss has suggested in the first volume of his *Mythologiques* (1964) that in all societies it is useful to contrast ‘the cooked’ and ‘the raw’ and that what is cultivated forms part of ‘the cooked’; the partridge is ‘the raw’.”

In the Andean economy, this differentiation is fundamental, given that there was no tribute in the Andes. The income of the State consisted of the availability of the energy of its inhabitants and access to their parcels of land, flocks, terraces, and other goods that Cusco appropriated. The political authorities, and, by extension, Tawantinsuyu, did not have rights to ‘the cooked’, that which was cultivated and raised by the household. That was not so for ‘the raw’: flocks of vicuñas, the eggs of wild ducks on the islands of Lake Titicaca, feathers collected by young herders; these sorts of things were handed over to the authorities.

The partridges and hens, therefore, belonged to two contrasting Andean ethno-categories. In the declaration of the *khipukamayoq* of 1561, we find them together. Without any other justification, the placement of this bunch of three avian cords appears to me to be an anomaly. I suggest that this group of cords in section VII had been inserted at this place in the 1561 *khipu* at some late moment, after 1532. In considering his principal line and looking for a place to put the new strings, I suggest that

No quedan sino dos grupos más: el primero reúne productos vegetales no cultivados, que requieren poca elaboración: leña y carbón, hierba y paja. Tal etnocategoría se divide quizás en dos grupos: madera y carbón, productos de la quebrada, separados de las gramíneas de altura. Esta división parece re-
petirse en la última agrupación, en la que se mezclan chicha, “toda fruta”, sal blanca y pescado. Si el maíz para jora y las guayabas provenían de la *quishiwa* y las yungas, la sal y el pescado seco eran productos serranos.⁷¹

La ventaja de tanta información nueva sobre el *kipu* tiene su lado decepcionante:

1. Las cantidades se expresan generalmente en pesos y medidas foráneas (“hanegas”, libras), o son tan vagos (cestillos, cargas) que la nueva fuente no contribuye sustantivamente al estudio de las equivalencias andinas iniciado por María Rostworowski (1960) y Emilio Mendizábal (1971). Aun cuando se menciona una medida andina, la *yzanga*,⁷² su capacidad no es calculable.

2. Faltan ciertos bienes que suponemos formaban parte importante de lo almacenado. Por ejemplo, las armas no aparecen sino en 1542, en un contexto completamente europeo,⁷³ cuando

the Andean accountant placed them at the end of a macrocategory (III to IV inclusive).”]

⁷¹ Entre los chupachu (1967 y 1972) la sal y el pescado eran productos del piso frío. [Editor’s note: Here Murra is referring to the Visita of Ortiz de Zúñiga.]

⁷² Domingo de Santo Tomás 1951:93 y 303: “Cesta: isanga”, “Ysanga: espuerta o cesto generalmente”. González Holguín 1952:469: “Cesta: yssanca compuesta de palillos e hojas”.

⁷³ En las páginas dedicadas a este *kipu*, publicadas por Waldemar Espinoza (véase, por ejemplo, acontecimientos *l o q*), se incluyen, algunas veces, mayores detalles acerca de entregas de objetos europeos que se han omitido en el

Vaca de Castro ordena la fabricación de picas con “carpinteros” españoles y aumenta la producción de plomo y cobre. La explicación más probable a la omisión del armamento se obtiene de los cronistas: cada grupo étnico se presentaba al servicio militar con sus armas tradicionales y bajo el mando de sus propios señores. Lo débil de tal explicación es que no coincide con el principio de que toda *mit’a* al Tawantinsuyu se cumplía con los utensilios del Estado.⁷⁴ El problema de cuál etnocategoría andina incluye las armas, queda sin resolver.

Tampoco la coca y el ají aparecen en el *kipu* transcrito en 1561, aunque sabemos por la relación de Vega que los *wanka* tenían sus “islas” o “valladas” y cocales en la ceja de selva. A primera vista es difícil saber si tal omisión se debe a razones andinas o europeas. Aunque el *kipu* refleja lo andino bajo presión española, cabría suponer que también hubo discretas omisiones tácticas.

Sin embargo, en el caso del ají, quisiera sugerir que su ausencia del *kipu* no es sino aparente. Cuando el informante habla de “toda fruta” se trata obviamente de algo conservable o seco.⁷⁵ El ají muy bien podría entrar en esta

cuadro (1971–1972:302, 310). [Editor’s note: This note is omitted from Murra’s English translation. It could be translated as: “In the pages devoted to this *kipu*, published by Waldemar Espinoza {Soriano} (see, for example, events l, o, q) sometimes greater detail is given about the handing over of European objects that have been omitted from the table (1971–1972:302, 310).”]

⁷⁴ En nuestras excavaciones en Huánuco Pampa, esperábamos poder aclarar el radio de acción de este centro administrativo incaico, usando la cerámica traída por los que cumplían con su *mit’a*. Las excavaciones demostraron que tal esperanza no tenía base en la economía andina. Toda la cerámica usada en la ciudad era de manufactura *inka*.

⁷⁵ Tanto Toribio Mejía Xesspe como Ana María Soldi me han sugerido la importancia de interpretar “toda fruta” en un sentido amplio que incluiría productos vegetales secos

categoría; hasta hoy se transporta y se guarda en cestillos. Quizás la coca también se enumeraría en la cuerda 37, indicando otra vez más la importancia de averiguar cuáles fueron los principios de etnoclasificación en las culturas que estudiamos.⁷⁶

El *khipu* de 1561 y los demás memoriales publicados por Waldemar Espinoza abren la posibilidad a futuras confrontaciones de las fuentes escritas con los objetos arqueológicos de contabilidad que estudian Carlos Radicati y Marcia y Robert Ascher.

de alto valor emotivo en los Andes, como el ají y la coca. [Editor's note: This footnote was not translated by Murra into English. It could be translated as: "Both Toribio Mejía Xesspe and Ana María Soldi have suggested to me the importance of interpreting "every fruit" in a broad way that would include dried vegetables of great emotive value in the Andes, such as chili peppers and coca."]

⁷⁶ [Editor's note: The last two paragraphs of the original Spanish published article were not translated by Murra into English. They could be translated as follows: "Nevertheless, in the case of chili peppers, I would like to suggest that their absence on the *khipu* is more apparent than real. When the informant speaks of "every fruit" this obviously pertains to something preserved or dry. Chili peppers may very well be included in this category. Up to now they are transported and kept in small baskets. Perhaps coca was also enumerated on cord 37, indicating once again the importance of discovering the principles of ethno-classification in the cultures we study.

The *khipu* of 1561 and the other memoranda published by Waldemar Espinoza {Soriano} open up the possibility for future confrontations of the written sources with the archaeological accounting objects being studied by Carlos Radicati and Marcia and Robert Ascher."]

NOTES ON THE ANALYSIS OF THE *KHIPU* AND A TABLE RECONSTRUCTING THE *KHIPU*

As reconstructed by Murra on the basis of the Hatun Xauxa elders' deposition, the Xauxa *khipu* consisted of 43 strings that hung, side by side, from a single major string. Each individual pendant string has been numbered from 1 through 43. The *khipu* recorded people, animals, and a variety of items that the Spaniards demanded from, and were given by, the inhabitants of Xauxa, as well as animals and items that the Spaniards looted from Xauxa storehouses. The table that is based upon the *khipu* indicates that the *khipu* was maintained by Xauxa *khipucamayoc* over a period of 15 years.

For the analysis:

- Groups of several hypothesized pendant strings pertaining to a common data set were assigned Roman numerals. For example, strings 1 and 2 in the Xauxa *khipu* pertained to people, one string for men and one for women. Thus strings 1 and 2 form a data cluster. That cluster was assigned Roman numeral I.
- Strings 3, 4, and 5 pertain to animals, and this cluster was assigned Roman numeral II.
- Further along the major string the *khipu* recorded data about cloth, including clothing and blankets, on strings 6, 7, and 8. The three "cloth" strings form a cluster that was assigned Roman numeral III.
- Dark black vertical lines within Murra's table reconstructing the *khipu* separate adjacent pendant string clusters. Dotted lines within a cluster separate items within that cluster.
- All together, the Xauxa *khipu* consisted of 12 string clusters. Except for clusters I and X, the categories for people—Xauxa men and women—from whom the Spaniards demanded physical labor, all the other clusters enumerated items that the Spaniards demanded and received from Xauxa and, in addition, items that the Spanish soldiers stole from Xauxa warehouses.

[A 15-year record of events and disbursements when Xauxa supplied the invading Spaniards with the labor of men and women as well as food and other items from their warehouses]	I		II		
	Men	Women	Sheep or ewes	Rams for food	Ewes, rams, alpacas, looted
	1	2	3	4	5
a) F. Pizarro “in the tambos” of Xauxa, 1533	589	437	1,275	12,045	29,231
b) Treasurer Riquelme, with those who remained, Xauxa, 1533–1534			642	132 rams	
c) F. Pizarro returns from Cusco. Before the campaign against Quisquis, received			380 “their food”		
ch) After the campaign against Quisquis, Pizarro received			200	rams 61	
d) For the campaign against Quiçu Yupanqui, they gave	735		60	10	
e) Quiçu Yupanqui rebelled		60			4,351 + 60 rams
f) Alonso de Alvarado received, 1537			563	2	
g) F. Pizarro towards Cusco, after the siege of Lima, 1538	266 armed with cargo		10		
h) Alonso de Mercadillo, a prisoner, takes the road to Lima, 1539	315	64	54		
i) Given to Mazuelas, his encomendero, 1541			10	1	
j) Pedro Álvarez Holguín, who went to join Vaca de Castro	325		118	17	
k) Almagro the Younger sacked, “burned many things”	524	662 with cargo			12,902; *13,045 rams
l) Vaca de Castro to Cusco, 1542	porters		5		
ll) Pedro Puelles went to Huánuco	224		81	23	
m) Vaca de Castro returns from Cusco			† 81		
n) Gonzalo Pizarro rebelled	351			20 pigs	19
o) Juan de Acosta, went to Cusco, rebelled	124	232			192
p) Gómez de Caravantes, his encomendero	278				
q) President Gasca, with the royal army, in Xauxa, 1548			173	8; 141 pigs	

* The transcription places these quantities outside their proper place.

/... continued

- † Rows ll and m are almost identical. Scribal error? Error by the *kipukamayoc*?

[A 15-year record of events and disbursements when Xauxa supplied the invading Spaniards with the labor of men and women as well as food and other items from their warehouses]	III			IV					
	Clothing, wool, fine cloth	Blankets	Clothing (looted)	Corn (hanegas)	Quinoa (hanegas)	Potatoes (hanegas)	Corn (looted)	Quinoa (looted)	Potatoes (looted)
	6	7	8	9	10	11	12	13	14
a) F. Pizarro "in the tambos" of Xauxa, 1533	19	2	2,216	12,406	124	1,249	21,563	2,336	2,414
b) Treasurer Riquelme, with those who remained, Xauxa, 1533–1534	4	2		7,582	171	371			
c) F. Pizarro returns from Cusco. Before the campaign against Quisquis, received	7			3,249	201	470			
ch) After the campaign against Quisquis, Pizarro received	12	6		* 2,202	* 202				
d) For the campaign against Quiçu Yupanqui, they gave				332	12	92			
e) Quiçu Yupanqui rebelled			58				313	12	110
f) Alonso de Alvarado received, 1537	23	4	128	13,488	188½	255			
g) F. Pizarro towards Cusco, after the siege of Lima, 1538				2,039	9	430			
h) Alonso de Mercadillo, a prisoner, takes the road to Lima, 1539	4	2		3,452	23	673			
i) Given to Mazuelas, his encomendero, 1541				1,184	3	325			
j) Pedro Álvarez Holguín, who went to join Vaca de Castro	23	2		1,438	20	61			
k) Almagro the Younger sacked, "burned many things"			271					20716	
l) Vaca de Castro to Cusco, 1542	13	2		9,230	186	535			
ll) Pedro Puelles went to Huánuco	4	1		3,762	17	267			
m) Vaca de Castro returns from Cusco	4	1		762	17	267			
n) Gonzalo Pizarro rebelled			3				2,367	28	81
o) Juan de Acosta, went to Cusco, rebelled							3,093	18	370
							In six burned storehouses		
p) Gómez de Caravantes, his encomendero				277	6	83			
q) President Gasca, with the royal army, in Xauxa, 1548	22	3		6,616	165	167			

* The transcription places these quantities outside their proper place.

/... continued

† Rows ll and m are almost identical. Scribal error? Error by the *kipukamayoc*?

[A 15-year record of events and disbursements when Xauxa supplied the invading Spaniards with the labor of men and women as well as food and other items from their warehouses]	V						VI			
	Rope sandals	Agave sandals	Rope sandals (looted)	Agave sandals (looted)	Heavy binding rope	Horse tackle	Cántaros, ollas, tinajas	Small vessels, gourds, bowls	Cántaros (looted)	Gourds (looted)
	15	16	17	18	19	20	21	22	23	24
a) F. Pizarro "in the tambos" of Xauxa, 1533		185 pairs		3,659			55	1,316	1231	11,285
b) Treasurer Riquelme, with those who remained, Xauxa, 1533–1534		75			4		745	1253		
c) F. Pizarro returns from Cusco. Before the campaign against Quisquis, received		72					1,228			
ch) After the campaign against Quisquis, Pizarro received		92			6		1,002	620		
d) For the campaign against Quiçu Yupanqui, they gave										
e) Quiçu Yupanqui rebelled				75 of wool					258	1346
f) Alonso de Alvarado received, 1537	123	182	90	231	5		2,589	1,635	124	1346
g) F. Pizarro towards Cusco, after the siege of Lima, 1538	203	123					1,725			
h) Alonso de Mercadillo, a prisoner, takes the road to Lima, 1539	53					288	125	573		
i) Given to Mazuelas, his encomendero, 1541	25	28					24	21		
j) Pedro Álvarez Holguín, who went to join Vaca de Castro	61	44				15	65	284		
k) Almagro the Younger sacked, "burned many things"			2,544	2,654		100			1,535	3,236
l) Vaca de Castro to Cusco, 1542	400	300				15	364	1963		
ll) Pedro Puelles went to Huánuco	210	300				15	25	123		
m) Vaca de Castro returns from Cusco	210	300				15	25	123		
n) Gonzalo Pizarro rebelled			32	12	7				24	124
o) Juan de Acosta, went to Cusco, rebelled										
p) Gómez de Caravantes, his encomendero	40	10				12	16	24		
q) President Gasca, with the royal army, in Xauxa, 1548	60	30				35	238	1,224		

* The transcription places these quantities outside their proper place.

/... continued

† Rows ll and m are almost identical. Scribal error? Error by the *kipukamayoc*?

[A 15-year record of events and disbursements when Xauxa supplied the invading Spaniards with the labor of men and women as well as food and other items from their warehouses]	VII			VIII				
	Spanish chickens	Eggs	Partridges	Split firewood (loads)	Kindling (loads)	Charcoal (loads)	Grass (loads)	Straw (loads)
	25	26	27	28	29	30	31	32
a) F. Pizarro “in the tambos” of Xauxa, 1533			1,240	200,071	30,404		48,989	321,354
b) Treasurer Riquelme, with those who remained, Xauxa, 1533–1534			1356	28,076	8,665		12,112	6,145
c) F. Pizarro returns from Cusco. Before the campaign against Quisquis, received			251	30,110			9,487	10,111
ch) After the campaign against Quisquis, Pizarro received			115	24,074	1213		8,915	10,123
d) For the campaign against Quiçu Yupanqui, they gave				2,200			10,134	10,133
e) Quiçu Yupanqui rebelled								
f) Alonso de Alvarado received, 1537	First in the sierra 5	811	153	17,000	232,203		34,220	11,113
g) F. Pizarro towards Cusco, after the siege of Lima, 1538				8,630				8713
h) Alonso de Mercadillo, a prisoner, takes the road to Lima, 1539				8,630			31,442	1,231
i) Given to Mazuelas, his encomendero, 1541	15	215	30	152	215		233	233
j) Pedro Álvarez Holguín, who went to join Vaca de Castro	30	636	125	122	1,165		23,343	3,451
k) Almagro the Younger sacked, “burned many things”								
l) Vaca de Castro to Cusco, 1542	110	2,526	74	1,130	9,990	10,672	25,450	10,325
ll) Pedro Puelles went to Huánuco	22	450	31	50	2,933		30,541	3,214
m) Vaca de Castro returns from Cusco	22	450	31	50	2,933		30,541	3,214
n) Gonzalo Pizarro rebelled	25	591		521				
o) Juan de Acosta, went to Cusco, rebelled								
p) Gómez de Caravantes, his encomendero	64	466	32	120	930		1,220	3,330
q) President Gasca, with the royal army, in Xauxa, 1548	463	3,730	555	4,110	7,230	632	25,402	5,045

* The transcription places these quantities outside their proper place.

/... continued

† Rows ll and m are almost identical. Scribal error? Error by the *kipukamayoc*?

[A 15-year record of events and disbursements when Xauxa supplied the invading Spaniards with the labor of men and women as well as food and other items from their warehouses]	IX				X	
	Chicha (cántaros)	All fruits (baskets)	White salt (pounds)	Fish (one-pound basket)	Porters at the exit	Servants at the exit
	33	34	35	36	37	38
a) F. Pizarro “in the tambos” of Xauxa, 1533	1,322			12,404	311	110
b) Treasurer Riquelme, with those who remained, Xauxa, 1533–1534	2,118			12,341		
c) F. Pizarro returns from Cusco. Before the campaign against Quisquis, received	1,033			1,212		
ch) After the campaign against Quisquis, Pizarro received	1,005			1,500	1,202	
d) For the campaign against Quiçu Yupanqui, they gave	10			10		
e) Quiçu Yupanqui rebelled						
f) Alonso de Alvarado received, 1537	Azua 2,424	354 measures	120	fresh 322	In chains 532	
g) F. Pizarro towards Cusco, after the siege of Lima, 1538	32	573	15	120		
h) Alonso de Mercadillo, a prisoner, takes the road to Lima, 1539		152	140	352		
i) Given to Mazuelas, his encomendero, 1541	31	42 measures	20	32		
j) Pedro Álvarez Holguín, who went to join Vaca de Castro	1,235	134	* 150	234 fresh		
k) Almagro the Younger sacked, “burned many things”						
l) Vaca de Castro to Cusco, 1542	2,102	1,234	50	120	1,546	
ll) Pedro Puelles went to Huánuco	1,041	612	60	80		
m) Vaca de Castro returns from Cusco	1,041	612	60	80	86 for Guadocheri	
n) Gonzalo Pizarro rebelled						
o) Juan de Acosta, went to Cusco, rebelled						
p) Gómez de Caravantes, his encomendero	23	300		120		
q) President Gasca, with the royal army, in Xauxa, 1548	2,032	2,510	110	225	2,526 men and women	

* The transcription places these quantities outside their proper place.

/... continued

† Rows ll and m are almost identical. Scribal error? Error by the *kipukamayoc*?

[A 15-year record of events and disbursements when Xauxa supplied the invading Spaniards with the labor of men and women as well as food and other items from their warehouses]	XI		XII		
	Sheep at the exit	Rams at the exit	Hanegas of corn, for the road	Quinoa for the road	Potatoes (hanegas) for the road
	39	40	41	42	43
a) F. Pizarro “in the tambos” of Xauxa, 1533			4,755	62	62
b) Treasurer Riquelme, with those who remained, Xauxa, 1533–1534					
c) F. Pizarro returns from Cusco. Before the campaign against Quisquis, received					
ch) After the campaign against Quisquis, Pizarro received	120	6	602		
d) For the campaign against Quiçu Yupanqui, they gave					
e) Quiçu Yupanqui rebelled					
f) Alonso de Alvarado received, 1537	283	8	1,415		
g) F. Pizarro towards Cusco, after the siege of Lima, 1538					
h) Alonso de Mercadillo, a prisoner, takes the road to Lima, 1539					
i) Given to Mazuelas, his encomendero, 1541					
j) Pedro Álvarez Holguín, who went to join Vaca de Castro	1,456	548			
k) Almagro the Younger sacked, “burned many things”					
l) Vaca de Castro to Cusco, 1542					
ll) Pedro Puelles went to Huánuco					
m) Vaca de Castro returns from Cusco					
n) Gonzalo Pizarro rebelled					
o) Juan de Acosta, went to Cusco, rebelled					
p) Gómez de Caravantes, his encomendero					
q) President Gasca, with the royal army, in Xauxa, 1548					

* The transcription places these quantities outside their proper place.

† Rows ll and m are almost identical. Scribal error? Error by the *kipukamayoc*?

	I		II		
	Varones	Mujeres	Ovejas de la tierra	Carneros para su comida	Ovejas, carneros, pacos, rancheados
	1	2	3	4	5
a) F. Pizarro, “en los tambos” de Xauxa, 1533	589	437	1,275	1,2045	29,231
b) Tesorero Riquelme, con los que se quedaron, Xauxa, 1533–1534			642	132 corderos	
c) F. Pizarro regresa del Cusco. Antes de la campaña contra Quiquis, recibió			380 “su comida”		
ch) Después de la campaña contra Quiquis, Pizarro recibió			200	corderos 61	
d) Para la campaña contra Quiçu Yupanqui, dieron	735		60	10	
e) Quiçu Yupanqui se llevó		60			4,351 + 60 corderos
f) Alonso de Alvarado recibió, 1537			563	2	
g) F. Pizarro hacia el Cusco, después del sitio de Lima, 1538	266 armados de carga		10		
h) Alonso de Mercadillo, va preso, camino a Lima, 1539	315	64	54		
i) Dieron a Mazuelas, su encomendero, 1541			10	1	
j) Pedro Álvarez Holguín, quien fbase juntar con Vaca de Castro	325		118	17	
k) Almagro el Mozo saqueó, “quemó muchas cosas”	524	662 cargados			12,902; *13,045 corderos
l) Vaca de Castro al Cusco, 1542	de carga		5		
ll) Pedro Puelles camino a Huánuco	224		81	23	
m) Vaca de Castro regresa a Cusco			† 81		
n) Gonzalo Pizarro se llevó	351			20 puercos	19
o) Juan de Acosta, camino al Cusco, se llevó	124	232			192
p) Gómez de Cervantes, su encomendero	278				
q) El Presidente Gasca, con el ejército real en Xauxa, 1548			173	8; 141 puercos	

* La transcripción ubica estas cantidades fuera de su lugar.

/... se continua

† Las líneas ll y m son idénticas con respecto a este dato. ¿Error de escribano?, ¿del *kipukamayoc*?

	III			IV					
	Vestidos, lana, cumbi	Frazadas	Vestidos (rancheados)	Maíz (hanegas)	Quinua (hanegas)	Papas (hanegas)	Maíz rancheado	Quinua rancheado	Papas rancheadas
	6	7	8	9	10	11	12	13	14
a) F. Pizarro, “en los tambos” de Xauxa, 1533	19	2	2,216	12,406	124	1,249	21,563	2,336	2,414
b) Tesorero Riquelme, con los que se quedaron, Xauxa, 1533–1534	4	2		7,582	171	371			
c) F. Pizarro regresa del Cusco. Antes de la campaña contra Quiquis, recibió	7			3,249	201	470			
ch) Después de la campaña contra Quiquis, Pizarro recibió	12	6		* 2,202	* 202				
d) Para la campaña contra Quiçu Yupanqui, dieron				332	12	92			
e) Quiçu Yupanqui se llevó			58				313	12	110
f) Alonso de Alvarado recibió, 1537	23	4	128	13,488	188½	255			
g) F. Pizarro hacia el Cusco, después del sitio de Lima, 1538				2,039	9	430			
h) Alonso de Mercadillo, va preso, camino a Lima, 1539	4	2		3,452	23	673			
i) Dieron a Mazuelas, su encomendero, 1541				1,184	3	325			
j) Pedro Álvarez Holguín, quien íbase juntar con Vaca de Castro	23	2		1,438	20	61			
k) Almagro el Mozo saqueó, “quemó muchas cosas”			271					20,716	
l) Vaca de Castro al Cusco, 1542	13	2		9,230	186	535			
ll) Pedro Puelles camino a Huánuco	4	1		3,762	17	267			
m) Vaca de Castro regresa a Cusco	4	1		762	17	267			
n) Gonzalo Pizarro se llevó			3				2,367	28	81
o) Juan de Acosta, camino al Cusco, se llevó							3,093	18	370
							En seis depósitos quemados		
up) Gómez de Cervantes, su encomendero				277	6	83			
q) El Presidente Gasca, con el ejército real en Xauxa, 1548	22	3		6,616	165	167			

* La transcripción ubica estas cantidades fuera de su lugar.

/... se continua

† Las líneas ll y m son idénticas con respecto a este dato. ¿Error de escribano?, ¿del *khipukamayoc*?

	V						VI			
	Alpargatas	Ojotas de cabuya	Alpargatas (rancheadas)	Ojotas (rancheadas)	Sobre-cargas grandes	Aderezos de caballos	Cántaros, ollas, tinajas	Chamélicos, porongos, escudillas	Cántaros (rancheados)	Porongos (rancheados)
	15	16	17	18	19	20	21	22	23	24
a) F. Pizarro, “en los tambos” de Xauxa, 1533		185 pares		3,659			55	1,316	1,231	11,285
b) Tesorero Riquelme, con los que se quedaron, Xauxa, 1533–1534		75			4		745	1253		
c) F. Pizarro regresa del Cusco. Antes de la campaña contra Quiquis, recibió		72					1,228			
ch) Después de la campaña contra Quiquis, Pizarro recibió		92			6		1,002	620		
d) Para la campaña contra Quiçu Yupanqui, dieron										
e) Quiçu Yupanqui se llevó				75 de lana					258	1,346
f) Alonso de Alvarado recibió, 1537	123	182	90	231	5		2,589	1,635	124	1,346
g) F. Pizarro hacia el Cusco, después del sitio de Lima, 1538	203	123					1,725			
h) Alonso de Mercadillo, va preso, camino a Lima, 1539	53					288	125	573		
i) Dieron a Mazuelas, su encomendero, 1541	25	28					24	21		
j) Pedro Álvarez Holguín, quien íbase juntar con Vaca de Castro	61	44				15	65	284		
k) Almagro el Mozo saqueó, “quemó muchas cosas”			2,544	2,654		100			1,535	3,236
l) Vaca de Castro al Cusco, 1542	400	300				15	364	1963		
ll) Pedro Puelles camino a Huánuco	210	300				15	25	123		
m) Vaca de Castro regresa a Cusco	210	300				15	25	123		
n) Gonzalo Pizarro se llevó			32	12	7				24	124
o) Juan de Acosta, camino al Cusco, se llevó										
p) Gómez de Cervantes, su encomendero	40	10				12	16	24		
q) El Presidente Gasca, con el ejército real en Xauxa, 1548	60	30				35	238	1,224		

* La transcripción ubica estas cantidades fuera de su lugar.

/... se continua

† Las líneas ll y m son idénticas con respecto a este dato. ¿Error de escribano?, ¿del *khipukamayoc*?

	VII			VIII				
	Gallinas de Castilla	Huevos	Perdices	Leña rajada (cargas)	Leña menuda (cargas)	Carbón (cargas)	Hierba (cargas)	Paja (cargas)
	25	26	27	28	29	30	31	32
a) F. Pizarro, “en los tambos” de Xauxa, 1533			1,240	200,071	30,404		48,989	321,354
b) Tesorero Riquelme, con los que se quedaron, Xauxa, 1533–1534			1,356	28,076	8,665		12,112	6,145
c) F. Pizarro regresa del Cusco. Antes de la campaña contra Quiquis, recibió			251	30,110			9,487	10,111
ch) Después de la campaña contra Quiquis, Pizarro recibió			115	24,074	1213		8,915	10,123
d) Para la campaña contra Quiçu Yupanqui, dieron				2,200			10,134	10,133
e) Quiçu Yupanqui se llevó								
f) Alonso de Alvarado recibió, 1537	primeras en la sierra 5	811	153	17,000	232,203		34,220	11,113
g) F. Pizarro hacia el Cusco, después del sitio de Lima, 1538				8,630				8,713
h) Alonso de Mercadillo, va preso, camino a Lima, 1539				8,630			31,442	1,231
i) Dieron a Mazuelas, su encomendero, 1541	15	215	30	152	215		233	233
j) Pedro Álvarez Holguín, quien íbase juntar con Vaca de Castro	30	636	125	122	1,165		23,343	3,451
k) Almagro el Mozo saqueó, “quemó muchas cosas”								
l) Vaca de Castro al Cusco, 1542	110	2,526	74	1,130	9,990	10,672	25,450	10,325
ll) Pedro Puelles camino a Huánuco	22	450	31	50	2,933		30,541	3,214
m) Vaca de Castro regresa a Cusco	22	450	31	50	2,933		30,541	3,214
n) Gonzalo Pizarro se llevó	25	591		521				
o) Juan de Acosta, camino al Cusco, se llevó								
p) Gómez de Cervantes, su encomendero	64	466	32	120	930		1,220	3,330
q) El Presidente Gasca, con el ejército real en Xauxa, 1548	463	3,730	555	4,110	7,230	632	2,5402	5,045

* La transcripción ubica estas cantidades fuera de su lugar.

/... se continua

† Las líneas ll y m son idénticas con respecto a este dato. ¿Error de escribano?, ¡del *khipukamayoc*!

	IX				X	
	Chicha (cántaros)	Todas frutas (cestillos)	Sal blanca (libras)	Pescado (cestillos de una libra)	Cargadores a la salida	Yanaconas a la salida
	33	34	35	36	37	38
a) F. Pizarro, “en los tambos” de Xauxa, 1533	1,322			12,404	311	110
b) Tesorero Riquelme, con los que se quedaron, Xauxa, 1533–1534	2,118			12,341		
c) F. Pizarro regresa del Cusco. Antes de la campaña contra Quiquis, recibió	1,033			1,212		
ch) Después de la campaña contra Quiquis, Pizarro recibió	1005			1,500	1,202	
d) Para la campaña contra Quiçu Yupanqui, dieron	10			10		
e) Quiçu Yupanqui se llevó						
f) Alonso de Alvarado recibió, 1537	azua 2,424	354 yzanga	120	fresco 322	en cadenas 532	
g) F. Pizarro hacia el Cusco, después del sitio de Lima, 1538	32	573	15	120		
h) Alonso de Mercadillo, va preso, camino a Lima, 1539		152	140	352		
i) Dieron a Mazuelas, su encomendero, 1541	31	42 yzanga	20	32		
j) Pedro Álvarez Holguín, quien íbase juntar con Vaca de Castro	1,235	134	* 150	234 fresco		
k) Almagro el Mozo saqueó, “quemó muchas cosas”						
l) Vaca de Castro al Cusco, 1542	2,102	1,234	50	120	1,546	
ll) Pedro Puelles camino a Huánuco	1,041	612	60	80		
m) Vaca de Castro regresa a Cusco	1,041	612	60	80	86 para Guadocheri	
n) Gonzalo Pizarro se llevó						
o) Juan de Acosta, camino al Cusco, se llevó						
p) Gómez de Cervantes, su encomendero	23	309		120		
q) El Presidente Gasca, con el ejército real en Xauxa, 1548	2,032	2,510	110	225	2,526 hombres y mujeres	

* La transcripción ubica estas cantidades fuera de su lugar.

/... se continua

† Las líneas ll y m son idénticas con respecto a este dato. ¿Error de escribano?, ¡del *kipukamayoc*!

	XI		XII		
	Ovejas a la salida	Carneros a la salida	Hanegas de maíz para el camino	Quinoa para el camino	Papas (hanegas) para el camino
	39	40	41	42	43
a) F. Pizarro, "en los tambos" de Xauxa, 1533			4,755	62	62
b) Tesorero Riquelme, con los que se quedaron, Xauxa, 1533-1534					
c) F. Pizarro regresa del Cusco. Antes de la campaña contra Quiquis, recibió					
ch) Después de la campaña contra Quiquis, Pizarro recibió	120	6	602		
d) Para la campaña contra Quiçu Yupanqui, dieron					
e) Quiçu Yupanqui se llevó					
f) Alonso de Alvarado recibió, 1537	283	8	1,415		
g) F. Pizarro hacia el Cusco, después del sitio de Lima, 1538					
h) Alonso de Mercadillo, va preso, camino a Lima, 1539					
i) Dieron a Mazuelas, su encomendero, 1541					
j) Pedro Álvarez Holguín, quien fbase juntar con Vaca de Castro	1,456	548			
k) Almagro el Mozo saqueó, "quemó muchas cosas"					
l) Vaca de Castro al Cusco, 1542					
ll) Pedro Puelles camino a Huánuco					
m) Vaca de Castro regresa a Cusco					
n) Gonzalo Pizarro se llevó					
o) Juan de Acosta, camino al Cusco, se llevó					
p) Gómez de Cervantes, su encomendero					
q) El Presidente Gasca, con el ejército real en Xauxa, 1548					

* La transcripción ubica estas cantidades fuera de su lugar

† Las líneas ll y m son idénticas con respecto a este dato. ¿Error de escribano?, ¿del *kipukamayoq*?

