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Identifying the sources of Inka period ceramics from northern Chile: results of a neutron activation study

John R. Alden [a,*], Leah Minc [b], Thomas F. Lynch [c]

[a] *University of Michigan Museum of Anthropology, 1215 Lutz Avenue, Ann Arbor, MI 48109, USA*
[b] *Oregon State University Radiation Center, Corvallis, OR 97331, USA*
[c] *Brazos Valley Museum of Natural History, Bryan, TX 77802 and Texas A&M University, College Station, TX 77843, USA*

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Abstract

To examine regional patterns of ceramic production and distribution during the era of Inka domination in northern Chile, we determined the elemental compositions of 157 samples of archaeological ceramics and geological clays from the sites of Catarpe and Turi using instrumental neutron activation analysis. We identified two major and three minor composition groups in the ceramics. The major groups, High Cr and Low Cr, are linked to clays from two broad geological contexts within the region, while the minor Low Na group is made up of ceramics imported from northwestern Argentina. The distribution of the composition groups indicates that, in the Catarpe–Turi region, patterns of ceramic production differed for different vessel types: jars were made from clay and temper acquired near the sites where the jars were used, while bowls were made of material coming from more distant sources. The geographical distribution of the analyzed ceramics indicates that bowls were exchanged between Catarpe and Turi in a pattern more similar to tribute/extraction than to market exchange, with Catarpe being the dominant site. The compositional analysis also demonstrates that Inka-style ceramics were being locally produced at sites in this region during the era of Inka domination.

Keywords: Inca; Inka; Ceramics; Chile; Neutron activation

1. Archaeological background

In northern Chile, the Late Intermediate Period (Solor Phase, A.D. 900–1450) was an era of locally independent sociopolitical units (*señoríos*) centered on oases scattered across the arid Atacama Desert landscape [21]. According to ethnohistoric sources, this region was incorporated into the Inka Empire during the reign of Topa Inka Yupanki. The advent of the Inkas, whose presence defines the Late Horizon Tardío Phase (A.D. 1450–1536), was marked by the establishment of new settlements incorporating structures built in Inka architectural styles, the construction of Inka style structures in previously occupied sites, the introduction of new types of metal objects and ceramics, and the construction of a system of routes and paths collectively called the Inka Road. These Inka features did not, however, replace the existing Atacameño settlements, structures, ceramics, and trails—they only supplemented the corpus of material culture already present in the region [1].

The two most important Inka administrative centers in this region were at Catarpe and Turi (Fig. 1). At Pukara de Turi, near the Rio Salado that drains into the upper Rio Loa, a small settlement was established around A.D. 900. The site, however, did not expand to its maximum size of about four hectares until around A.D. 1300, and the earliest evidence of an Inka presence at Turi dates to around the end of the 14th century [2]. In contrast, Catarpe Tambo, an Inka administrative center on the Rio Grande de San Pedro about 10 km north of modern San Pedro de Atacama, appears to have been established by the Inkas or their local surrogates when the region was added to Inka territory somewhere around A.D. 1450 [19].

* Corresponding author. Tel.: +1 734 663 8121.
E-mail address: jralden@umich.edu (J.R. Alden).

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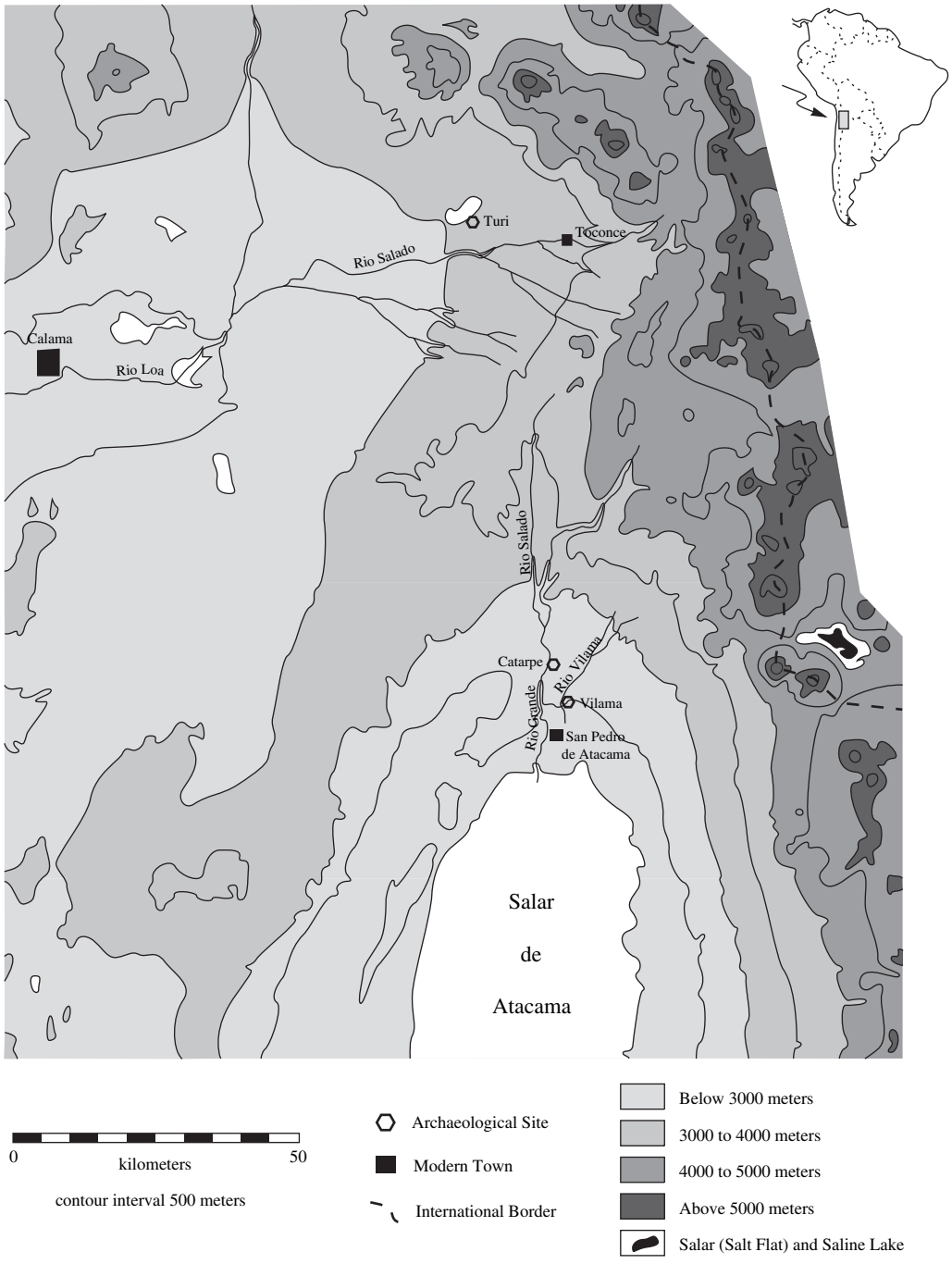

Fig. 1. Map of Calama region, showing locations discussed in text.

Turi is only about 80 km from Catarpe, and the Solor and Tardío Phase ceramics from these sites are very similar. Archaeologists use a single set of names to describe the pottery from the two sites, and in most cases it is not possible to distinguish pottery from the Turi and Catarpe regions using visual examination alone. However, because the two sites lie in different geological regions and different drainage basins, it seemed likely that ceramics made near Catarpe and San Pedro de Atacama would have different elemental compositions from similar-looking ceramics made near Turi.

We initiated a neutron activation study of Tardío Period ceramics and geological clays from Turi, Catarpe, and several neighboring sites in the San Pedro de Atacama oasis to see whether the pottery from these settlements could be differentiated into distinctive compositional groups and identified with different sources of clay and temper. If we were able to define such groups, we intended to use those data to determine patterns of ceramic production and exchange in this region during the period of Inka domination using compositional characteristics of the archaeological material rather than stylistic features of the ceramics or assumptions derived from ethnohistoric records pertaining to other areas of the Inka Empire. Such data would help us to elucidate directly the form and scale of economic reorganization that occurred in this