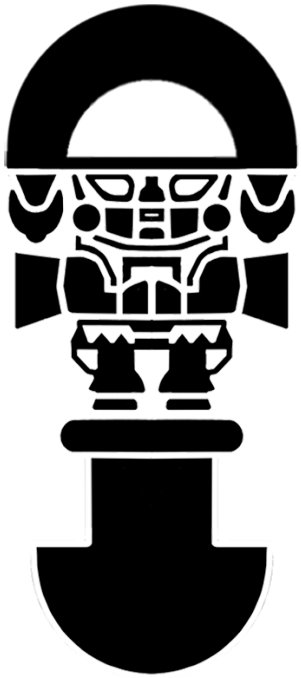
The 31st Annual Northeast Conference on Andean Archaeology and Ethnohistory

October 20-21, 2012

Hosted by the Department of Anatomy and Neurobiology
Boston University School of Medicine

AND

Department of Archaeology
Boston University



Schedule for 31st Annual Northeast Conference on Andean Archaeology and Ethnohistory

Boston University, Boston, MA, October 20-21, 2012

Saturday, October 20, 2012 **Kenmore Classroom Building Auditorium**

8:00 – 8:55 AM	**Coffee, registration**
8:55 – 9:00 AM	**Welcome**
Session 1	**Moderated by Jonathan D. Bethard**
9:00 – 9:25 AM	*Allison R. Davis*: Materialist Villages or Idealist Communities? The Effect of Site Formation Processes on the Portrayal of Pre-state Andean Settlements
9:25 – 9:50 AM	*Maria Masucci, Mathieu Boudreau, Abigail Middleton, Michelle Bettex*: San Biritute, Totems and Changing Identities in the Ecuadorian Coastal Plain
9:50 – 10:15 AM	*John H. Walker*: Squaring the Circle: A Ring Ditch West of the Mamoré River
10:15 – 10:40 AM	*Richard W. Miksad, Kenneth Wright, Luke Wildfire, Arminda Gibaja Oviedo*: A Hydraulic Engineering Study of the Incamisana, Ollantaytambo, Peru
10:40 – 11:00 AM	**BREAK**
Session 2	**Moderated by Emily Peschel**
11:00 – 11:25 AM	*Verity H. Whalen, Luis Manuel Gonzalez La Rosa*: Societal Interaction and Community Politics During the Early Intermediate Period in Nasca, Peru
11:25 – 11:50 AM	*Brittany Fullen*: An Agency Approach to Constructing a Ceramic Style for Study of Middle Horizon Quotidian Ware
11:50 – 12:15 PM	*Maeve Skidmore*: Domestic Activity and Daily Life at Hatun Cotuyoc, Huaro: A Few Reflections on the Wari Presence in the Cusco Region of Peru
12:15 – 1:45 PM	**LUNCH BREAK**

Session 3	**Moderated by Ma. Fernanda Boza C.**
1:45 – 2:10 PM	*Arturo F. Rivera*: Ceremonial Spaces at the Base of the Akapana
2:10 – 2:35 PM	*Brian Billman, Jesús Briceño Rosario*: A Social History of the Late Moche Phase in the Moche Valley: Results of Recent Excavations and Settlement Pattern Analysis
2:35 – 3: 00 PM	*Go Matsumoto:* Ritual Chicha Libation at the Great Plaza of the Middle Sican Capital
3:00 – 3:15 PM	**BREAK**
Session 4	**Moderated by Kimberly McCraw**
3:15 – 3:40 PM	*Randy Hahn:* The Role of Terraces in Local Ideological Strategies: Preliminary Excavation Results from Huasi Huaman, a Late Intermediate Period Settlement in the Jequetepeque Valley of Peru
3:40 – 4:05 PM	*Warren B. Church, Luis Valle Alvarez*: Archaeological Demography and "Cultural Origins" in the Northeastern Peruvian Montane Forest
4:05 – 4:10 PM	**BUSINESS MEETING**
4:10 – 4:30	**BREAK**
4:30 – 4:35 PM	**KEYNOTE INTRODUCTION – Jonathan D. Bethard**
4:35 – 5:35 PM	**KEYNOTE LECTURE** *Melissa S. Murphy:* Colonized Bodies, Colonizing Bodies: Bioarchaeology of Spanish Contact and Colonialism in the Central Andes

Sunday, October 21, 2012 **Kenmore Classroom Building Auditorium**

Session 6	**Moderated by Chase Phillips**
9:00 – 9:25 AM	*Emily Baca Marroquín*: Inca Political Strategies in the Asia Valley, Central-South Coast of Perú
9:25 – 9:50 AM	*Jose Maria Lopez Bejarano*: Inca Sacred Shrines and Pilgrimage Routes in the Lake Titicaca Basin: Results of an Archaeological Survey of the Copacabana Peninsula, Bolivia

9:50 – 10:15 AM	*Anastasiya Travina*: Khipu, MatLab, and Modern Statistics: Using Bootstrapping Methods for Analyzing Inka Khipu
10:15 – 10:40 AM	*Jeremy James George:* Small-spaces, or the Cultural Poetics of Centeredness in Prehispanic Inka Architectonic Space
10:40 – 11:00 AM	**BREAK**
Session 7	**Moderated by Katie N. Woods**
11:00 – 11:25 AM	*Colin A. Cooke, Richard Burger, Jay Ague*: Using Mercury Isotopes to Source Cinnibar (HgS)
11:25 – 11:50 AM	*Hendrik Van Gijseghem*: Andean Mining and Metaphysics: Toward a Social Life of Minerals in Ancient Nasca
11:50 – 12:15 PM	*Ana Nieves, Gori Tumi Echev Arría*: Documentation and Analysis of Petroglyphs in the Nasca Valley Using Reflectance Transformation Imaging (RTI)
12:15 – 12:40 PM	*Richard Newman, Emily Kaplan*: The Source of The Resin Used by the Inka to Decorate Qero Cups
12:40 – 12:45 PM	**CLOSING REMARKS**

Abstracts for 31st Annual Northeast Conference on Andean Archaeology and Ethnohistory
Boston University, Boston, MA, October 20-21, 2012

Materialist villages or idealist communities? The effect of site formation processes on the portrayal of pre-state Andean settlements

Allison R. Davis (Oberlin College)

In the Andes, archaeologists working in coastal areas often use *materialist* frameworks to describe a *village* as a group of households that are minimal productive units integrated through an institution of power. In contrast, many working in the highlands use *idealist* frameworks to describe *communities* of individuals united through ceremonial practice. This paper evaluates the relative importance of three factors in creating these stories about the Andean past: (1) cultural differences between the coast and highlands; (2) academic distinctions between materialist and idealist theoretical traditions; and (3) differential preservation and visibility of architecture resulting from distinct environmental conditions. I present six case studies (1500 BC – AD 200) to argue that the visibility of houses and public structures prior to excavation has been the most important factor in theory selection and subsequent descriptions of life in pre-state settlements. Preliminary results from magnetometry survey at Yuthu in Cusco, Peru (400 – 1 BC) suggest that remote sensing may mitigate the effect of site formation processes on the characterization of life in highland sites.

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San Biritute, Totems and Changing Identities in the Ecuadorian Coastal Plain

Maria Masucci (Drew University), Mathieu Boudreau (Drew University), Abigail Middleton (University of Missouri), Michelle Bettex (Drew University)

The return in July 2011 of the carved stone figure known as "San Biritute" to the small coastal plain village of Sacachún from its modern home in the Guayaquil Municipal Museum, was heralded as a triumph over years of theft of local cultural heritage. This stone figure stood in Guayaquil as testimony to the artistry of the pre-columbian past but for Sacachún it was a symbol of loss of identity and loss of the holder of fertility and good fortune. The statue was originally located on a site dated to the Huancavilca phase - the final prehispanic cultural phase of coastal Ecuador. It was moved to sit alongside the central village cross before finally being taken by archaeologists in the 1930s. The return of San Biritute has revitalized the community socially and economically and the 2012 rains were the first significant rainfall in the area in 10 years. This statue is a central player and symbol in the changing landscape of coastal Ecuadorian identity but it also reverberates in changing the face of archaeological research in this region. A renewed interest in the past has brought community leaders to seek out the assistance of archaeologists to recover and preserve ancient remains.

Our research in the region has resulted in a large body of data on sites like those in which San Biritute once stood. We report here on the range of analyses we have applied to these sites and their material remains in an attempt to understand their role in what was a past period of change and transformations in identity.

Squaring the Circle: A Ring Ditch West of the Mamoré River

John H. Walker (University of Central Florida)

Ring ditches are a distinctive category of earthworks, well known thanks to the research of Clark Erickson near Baures, and of Heiko Prümers at Bella Vista. Similar earthworks are also found across Southern Amazonia from Acre, across Eastern Bolivia as far east as the Xingu. Ring ditches are also found in the geographical center of the Llanos de Mojos, along the Yacuma and Rapulo Rivers, west of the Mamoré River. These features are found in association with one of several distinctive pre-Columbian landscapes of intensive agriculture. The relationship between ring ditches and these other earthworks is unclear. A second season of excavation at Isla Estancita, an island of dry forest between the Yacuma River and Quinato Wetland, shows that permanent occupation extends outside of the circle. Whether they had hydraulic or defensive purposes, ring ditches probably organized settlement and helped to define places. Evidence from three excavations at Estancita suggests relationships with people living along the Iruyañez River to the north, and the Apere River to the south. Ring ditches may have been part of the built environment that communities used to negotiate a multilingual, multiethnic social landscape.

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A Hydraulic Engineering Study of the Incamisana, Ollantaytambo, Peru

Richard W. Miksad (University of Virginia), Kenneth Wright (Wright Water Engineers), Luke Wildfire (Wright Water Engineers), Arminda Gibaja Oviedo

In the summers of 2011 and 2012, a team of water resource engineers from the University of Virginia, University of Colorado and Wright Water Engineers, along with archaeologists from the Instituto Nacional de Cultura conducted a hydrological and hydraulic study of the Incamisana water temple at Ollantaytambo, and the watershed that provides water to the temple site. This paper will provide a preliminary report of our findings.

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Societal interaction and community politics during the late Early Intermediate Period in Nasca, Peru

Verity H. Whalen (Purdue University), Luis Manuel González La Rosa (Universidad Nacional Mayor de San Marcos)

This paper presents the preliminary results of excavations during the 2012 field season at Cocahuischo, a large Late Nasca settlement in the Tierras Blancas Valley, Peru. At 10 hectares, Cocahuischo was the major Tierras Blancas settlement during the late Early Intermediate Period (ca. AD 550-750) and is located less than 2km from Pataraya, the Wari way station that was established in Tierras Blancas during the subsequent Middle Horizon. Excavations and architectural analysis of domestic spaces were undertaken at the site to investigate the nature of Late Nasca society, which is still largely unstudied, and to historically situate the Wari colonial encounter in Nasca. Preliminary results of this research suggest that Late Nasca society was characterized by a time of rapid social change during which increasingly cosmopolitan actors challenged traditions and intentionally or not, set the stage for Wari colonialism.

An Agency Approach to Constructing a Ceramic Style for Study of Middle Horizon Quotidian Ware

Brittany Fullen (Binghamton University – SUNY)

Agency-based studies have ranged from the special, exotic, and ritual objects, to the mundane, everyday things that constitute the majority of cultural worlds. While Andean scholars have thoroughly evaluated the more beautiful/complex/well-made artifacts to uncover information about past lifeways and interactions, this material-studies focus on special occasion, once-in-a-while objects perpetuates a lopsided approach to exploring the past. I argue that we should be spending more time on artifacts that actually interacted with people on a regular basis, and were the objects that mediated, shaped, and reinforced past people's identities, social relationships, and cultural world.

In the archaeological process of ceramic style construction, the question of 'how ceramics operated in past societies' usually becomes a concern only after the style has been defined. The current idea is that in order to understand what a ceramic did, we first must decide what the ceramic was. Instead, I suggest asking this question at the outset of the endeavor as a way to avoid producing an outcome that would have been meaningless to the people who interacted with the pottery.

Taking an agency-based approach to classifying quotidian Middle Horizon Huamanga ceramics, I explore the proposition that this pottery represents a highly regionalized ceramic style. My goal is not just to provide a clear explanation of what we actually mean when we apply the word "Huamanga" to ceramics, but by refocusing on the concepts relevant to the social production process, reveal the transient and active nature of the ceramics. This project has been influenced by the work of Alfred Gell and Chris Gosden, and employs concepts of 'secondary agency' and 'index', as well as Gosden's discussion of 'stylistic universes'.

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Domestic activity and daily life at Hatun Cotuyoc, Huaro: a few reflections on the Wari presence in the Cusco Region of Peru

Maeve Skidmore (Southern Methodist University)

Our understanding of the activities and pursuits of Wari colonists in the Cusco region of Peru (AD 600-1000) is hampered by relatively limited archaeological exposures of living and working space, most of which come to us from the site of Pikillacta. Due to a number of complications, interpretations of the data collected there vary substantially. Determining what the Wari were doing in the Cusco region – in terms of extracting resources, exchange with local groups and those further abroad, industry and the construction of new communities – is important for modeling motivations for Wari colonization of the region as well as why the Wari invested so heavily there. Recent work at Hatun Cotuyoc, a residential sector of the Wari complex at Huaro, presents new data on the undertakings of Wari colonists. Evidence related to domestic daily and ritual life, production activities and participation in exchange will be reviewed. Preliminary conclusions regarding how the data from Hatun Cotuyoc contribute to models of Wari expansion will be discussed.

Ceremonial Spaces at the Base of Akapana

Arturo F. Rivera (PUCP)

This paper describes discoveries from excavations in two units at the base of the Akapana pyramid at the site of Tiwanaku. The excavations were conducted as part of the Pumapunku-Akapana Project in 2005 and 2006. Our goals in these excavations were (1) to confirm the data collected during geophysical investigation that showed an alignment of stones that could be part of a perimeter wall, (2) to find a gravel floor previously excavated in other units to the northeast of the Akapana and to verify that this gravel floor was associated with the perimeter wall, and (3) to verify that the excavation area was an open space or "c*ancha*". All of the materials collected in this excavation were analyzed and here, these data are compared with those from other excavation units with similar depositional characteristics in the "S" Zone of the Pumapunku-Akapana Project and other spaces from both inside and outside of the Tiwanaku moat. Changes in the use of surfaces and spaces will be discussed.

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A Social History of the Late Moche Phase in the Moche Valley: Results of Recent Excavations and Settlement Pattern Analysis

Brian R. Billman (MOCHE, Inc. and UNC-Chapel Hill), Jesús Briceño Rosario (ICPAC and El Ministerio de Cultura, Peru)

Increasingly archaeologists are questioning long-held reconstructions of the transition from Moche polities in the Early Intermediate period to the rise of Chimu and Lambayque polities in the Late Intermediate period. Recent research has called into question the validity of the Late Moche phase and the reconstruction of the Late Moche as a period of political decline, warfare, and fragmentation after the demise of a regional southern Moche state. Is the Late Moche phase a valid time period? Were the sites of Moche and Galindo contemporary throughout most of their occupation? What happened during this period of transformation? Our analysis of radiocarbon dates, Moche Valley settlement pattern data and recent rural household excavations indicates that we may be too hasty in our discarding of conventional interpretations. Our analysis indicates that (1) a reversal in the calibration curve in the AD 700s and 800s makes assessments of contemporaneity of sites in those centuries via radiocarbon dating impossible, (2) a distinct assemblage of ceramic types can be used to define a Late Moche phase in the Moche Valley and (3) application of these types to settlement pattern data indicates a dramatic shift in population in the Moche Valley to fortified settlements in the middle valley in the Late Moche phase.

Ritual Chicha Libation at the Great Plaza of the Middle Sican Capital

Go Matsumoto (Dumbarton Oaks Research Library and Collection)

The Great Plaza at the Middle Sican capital in the mid-La Leche Valley on the northern North Coast of Peru is seemingly a featureless open space surrounded by major ceremonial mounds. Previous excavations by the Sican Archaeological Project (SAP), however, have revealed that there took place multiple, simultaneous activities within the plaza, such as craft production, handling of dead body parts, ritual activity using a small canal, large-scale food preparation and consumption, and storage and management of adobe bricks most probably for building and renovating ceremonial architectures nearby. Focusing on the ritual activity using a canal, this presentation discusses the results and implications of my recent species identification analysis of macro and microethnobotanical remains recovered from the excavation by the SAP in 2008.

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The Role of Terraces in Local Ideological Strategies: Preliminary Excavation Results from Huasi Huaman, a Late Intermediate Period Settlement in the Jequetepeque Valley of Peru

Randy Hahn (McGill University)

This paper explores the purpose of terrace architecture at the Late Intermediate Period settlement of Huasi Huaman in the Jequetepeque Valley of Peru. Huasi Huaman was occupied approximately around the time of the conquest of the region by the Chimú Empire and was likely the home of local leaders who served as intermediaries between the indigenous population and the imperial Chimú. Recent excavations conducted earlier this year uncovered evidence of maize agriculture, food production and household craft production in association with terraces constructed on the slopes above ceremonial platforms, indicating that these spaces were the loci of multiple activities. I argue Huasi Huaman's many terraces were domestic spaces utilized to support ceremonies hosted on nearby platforms. I also compare the terraces to domestic space located in lower sectors to determine whether the nature of activities varied between locations. This paper attempts to understand the ways in which the non-elite inhabitants of the Jequetepeque Valley were engaged and participated in the ideological strategies of local leaders within the Chimú Empire.

Archaeological Demography and "Cultural Origins" in the Northeastern Peruvian Montane Forest

Warren B. Church (Columbus State University), Luis Valle Alvarez (Qetzal S.A.C.)

For more than one hundred years, archaeologists have attributed the impressive monumental settlement complexes in the northeastern Peruvian montane forest, or *ceja de selva*, to late pre-Hispanic population intrusions from densely populated neighboring regions, or to colonization by highland states and empires. The longevity and tenacity of these migrationist explanations is remarkable given their lack of support by scientifically gathered, analyzed and interpreted data. During recent decades, the recovery and publication of archaeological data from the Chachapoyas region, and especially from Gran Pajatén and other sites in and around Peru's Rio Abiseo National Park, has provided provocative evidence supporting arguments for the *in situ* development of autonomous *ceja de selva* societies. In order to test common migration and colonization hypotheses and to place Rio Abiseo park sites within a regional settlement context, we recently conducted an archaeological survey on the highland cordillera of Pataz Province above and adjacent to the *ceja de selva* tree line. The predominance of relatively small and dispersed settlements in the highland study area contradicts migrationist expectations of dense late pre-Hispanic populations and powerful expansionist polities. Our survey of this understudied region rendered evidence of human occupation dating from the Early Horizon, and we documented sites at Condormarca and Pias referenced in Garcilaso's account (copied from Blas Valera) of Topa Inca's conquest of Chachapoyas. The identification of many small sites related to transportation and communication along the paved pre-Hispanic road network support our hypothesis that intense interregional interaction likely fueled periodic episodes of population nucleation. This interaction ultimately sparked cultural innovations that culminated in the construction of Gran Pajatén and other unique *ceja de selva* monumental sites now designated as UNESCO World Cultural Heritage.

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Inca political strategies in the Asia Valley, Central-South Coast of Perú

Emily Baca Marroquín (University of Illinois at Chicago)

Empires, whether modern or ancient, transform non-state societies to suit their needs. In the Andes, the Inca Empire (A.D. 1400-1532) developed a variety of strategies to satisfy their demands for tribute in labor and goods. These strategies were adapted to deal with myriad societies conquered by the Incas. In turn, these strategies had differing impacts on societies at the local level.

Political, economic and social transformations occur when imperial and non-state societies encounter. To examine the changes introduced by the Incas into the structure of coastal societies, I will examine the Inca conquest of the Asia Valley in the Central-South Coast of Perú. And I will attempt to reconstruct the political scenario and the changes originated after the conquest of this area by the Incas.

Inca Sacred Shrines and pilgrimage routes in the Lake Titicaca Basin: Results of an Archaeological Survey of the Copacabana Peninsula, Bolivia.

Jose Maria Lopez Bejarano (University of Pennsylvania)

The economic, political and ideological motivations for the conquest and incorporation of the Lake Titicaca region into the Inca Empire have been the focus of several historical and archaeological studies. Among these stimuli, Inca ideology is particularly complex since the domination of sacred places was a political means of legitimizing sovereignty and control over other Andean societies. The Inca materialized their cosmology and mythic history through the appropriation and transformation of important, pan-Andean sacred shrines, such as Pachacamac and Tiwanaku. Similarly at Lake Titicaca, Inca creation myths incorporated local, pre-existing belief in the significance of the Lake as the place where the god Viracocha created not only the sun, moon, and stars but also the whole human race in all their diversity of dress, language, and culture. In particular, the Sacred Rock or Intikala at the northern tip of the Island of the Sun represented the actual place where the Sun was born, and was the end point of a major pilgrimage route during the Inca occupation. According to the chroniclers, the Inca sacred route, that conducted pilgrims initially into the Peninsula of Copacabana and subsequently to the islands, had to go through a series of gateways, massive walls, towns, and facilities, guiding individuals through a ritual journey of purification, prayer, and offering-making. As a result of these initiatives the Inca effectively materialized their mythical history and transformed the landscape in order to respond to the requirements of growing populations concentrated near to the shrines. The purpose of this presentation is to discuss preliminary results of an archaeological survey in the Copacabana Peninsula in order to expose the varied ways in which the Inca modified preexisting shrines, and thus re-altered the landscape of the Copacabana Peninsula, Bolivia.

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Khipu, MatLab, and Modern Statistics: Using Bootstrapping Methods for Analyzing Inka Khipu

Anastasiya Travina

The communication system of the Inka Empire, *khipu*, comprises sets of yarn, containing numerous knots, which are tied along the length of the strands of yarn. Some scholars maintain that the structure of khipu contains narrative information encoded in a binary system and represents an intricate semasiographic form of information recording. This paper attempts to understand the sophisticated system of communication of the Inka Empire, using modern technology in the fields of statistics and numerical computing software. Specifically, I explore the application of bootstrapping methods coded in MatLab to the analysis of the correlations of cord values, lengths, colors, and types of cord attachments (U, V, R) from two regions denoted in the Khipu Database Project as “UR-Khipu North and Central Coast of Peru” and “UR Khipu South Coast of Peru.” Additionally, in attempt to understand the regional differences of khipu, special attention is paid to the analysis of samples from Nazca, Paracas, and Tambo Colorado from the southern coast of Peru.

Small-spaces, or the Cultural Poetics of Centeredness in Prehispanic Inka Architectonic Space

Jeremy James George (The Graduate Center of the City University of New York)

Thus far overlooked in the critical literature on the Inka, this paper analyzes *small-spaces*—the term itself is adopted here for constructions without toponyms—comprised of physically opposed, structurally mediated, and ultimately complementary passages of marked landscape elements. Working with basic elemental materials of stone, water, and space, the Inka constructed hybrid natural-cultural landscape spaces that embody metaphorical principles of transformation. In choosing stone and water as the elemental units of architecture, culture, and spatial culture (via myth, symbol, ritual), the Inkas essentially chose oppositional material categories deeply rooted in the landscape and in environmental cyclicality; their aesthetic qualities encompass the balance of Inka vision and imagination. Although scholars have formally analyzed the use of stone and water in Inka architecture, little has been done with regard to the architectonic relations of stone, water, and space as a coherent unit that shaped the broader Inka cultural poetic. This paper examines and interprets a small sample of *small-spaces* located in the Inka heartland and transposes its interpretation of their efficacy as an empire-wide principle.

More specifically, this paper focuses on the third element of Inka spatial practice listed above, albeit the one that is most elusive, fragmentary, definitionless, and unsettled. It is space. Specifically, it is the space that exists between, or *in-between*, the opposed and mirrored entities. It is the space that exists in-between rocks in the landscape. It is the relation of the elements—*rock / rock* and *rock / water / rock*—focusing, in a sense, on the location of those typographical markers and how they connect, draw into relation, set into opposition, and simultaneously bridge and distance the terms of order. What happens in-between is crucial. My analysis here is limited to mirrored rock forms investigated first-hand, primarily in the Cuzco valley but also beyond the immediate heartland. As such the analysis is limited in scale but ambitious in its potential scope of application. Ultimately, I argue that these *small-spaces*, which are literally small-spaces, are intrinsic, foundational, constituent units of the Inka's broader imperial paradigms of control and controlled meaning.

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Using mercury isotopes to source cinnabar (HgS) in the Andes

Colin A. Cooke (Yale University), Richard Burger (Yale University), Jay Ague (Yale University)

Cinnabar (HgS) is the primary mineralogical source of mercury (Hg), and forms a bright red pigment (vermillion) when powdered. In the South American Andes, vermillion is found in graves of high-status individuals and as a paint covering funerary masks and adorning ceremonial artifacts. However, little is known about which cinnabar deposits were exploited by Inca and pre-Inca cultures. Here, we use high-precision measurements of Hg isotopes, which are affording new insight into source apportionment and the biogeochemical cycling of mercury, to source cinnabar found in association with archaeological materials from a range of Andean civilizations. Archaeological cinnabar, from a range of artifacts spanning the Chavín through Colonial times, matches closely with the isotopic composition of cinnabar ore from Huancavelica, Peru. The only exceptions are a collection of wooden digging boards, which radiocarbon date to the Late Horizon and come from the southwest coast of Peru. The cinnabar associated with these items is not from Huancavelica, indicating the exploitation of a new source of cinnabar during Inca territorial expansion. For the first time, we demonstrate the potential of mercury isotopes to enrich the geoarchaeological record by specifying the exact mineral sources exploited by Andean cultures.

Andean Mining and Metaphysics: Toward a Social Life of Minerals in Ancient Nasca

Hendrik Van Gijseghem (Université de Montréal)

Recent research on the Peruvian south coast has revealed the important role of mining for prehispanic people. In particular, hematite procurement has been documented at Mina Primavera, a mine used during the first millennium AD by Nasca people in which ritual life associated with the extraction of pigment was partially reconstructed. In this paper I explore the idea that extraction of the earth's substance was one step in the expression of a complex system of cognition that had deep roots in Andean worldview, and that this system was central in the processes of production and consumption of pottery. In this scheme, ceramic objects simultaneously encapsulate distinct dimensions: instrumentality, iconographic medium, and materiality. The latter, I argue, implies that ancient consumers were conscious of the substances contained in clay and pigments and of their origin in the landscape. It follows that ceramic manufacture brought together diverse forces ultimately derived from the substance of the landscape, which were woven together in a form of metaphysical grammar. I use the common but underreported phenomenon of sherd burial to support this idea.

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Documentation and Analysis of Petroglyphs in the Nasca Valley Using Reflectance Transformation Imaging (RTI)

Ana Nieves (Northeastern Illinois University), Gori Tumi Echev Arría (Universidad Nacional Mayor de San Marcos and Asociación Peruana de Arte Rupestre)

Rock art sites in lower Nasca Valley include concentrations of both petroglyphs and pictographs. Unfortunately, these are on poorly cemented sandstone and the weathering of the surface has partially destroyed some of the rock art motifs. During the summer of 2012, we used Reflectance Transformation Imaging (RTI) to document petroglyphs at one Nasca Valley rock art site. Highlight RTI involves taking a series of photographs of the same subject with the camera in a fixed position. The subject is lit from a different angle in each photograph, with the light source at a consistent distance from the surface. The resulting Reflectance Transformation Image is an interactive file that combines data from all of the photographs in the set, can be relit from different angles in a viewer, and can be digitally enhanced for better viewing. Using this technique, we were able to obtain clear images of different petroglyph manufacturing techniques, as well as evidence for the re-carving of some motifs. This evidence allows us to move beyond iconographic comparisons in the determination of descriptive types and to identify distinct rock art manufacturing episodes.

The Source of the Resin Used by the Inka to Decorate Qero Cups

Richard Newman (Museum of Fine Arts, Boston), Emily Kaplan (National Museum of the American Indian)

The Inka used an unusual rubbery resin which they mixed with pigment, stretched into a thin film, then cut into small pieces to inlay onto the surfaces of wooden qero cups. This resin has long been identified as "mopa mopa," a material still used by craftsmen in the southern Colombian town of Pasto to create elaborate decorations on small decorative objects. The first known, clearly dated occurrence of the resin on any type of artifact is a pair of excavated qeros from the Cusco region that date to 1537-9. However, it is likely that by this time the resin was being routinely used in the Pasto region to decorate objects. There is some evidence that the resin was known as a raw material in the Pasto region centuries earlier, but we do not currently know by whom and how the utilization of it as an inlay medium was initially developed. It has been suggested that the Inka may have learned about the material from Colombian craftsmen at the northern edges of their empire, but if this was the case, it is not known whether the raw material itself, and perhaps also craftsmen wh o knew how to use it, may have been imported to centers much further south where it is thought that qeros were mainly produced.

Our study focuses on the two species of the *Elaeagia* tree that were the only likely sources of the resin. Both species currently grow in southern Colombia and Peru, including the Cusco region. It appears that resin from the two species can be distinguished through analysis. Using these criteria and analyses of a few samples from artifacts, it appears that the Inka may have utilized resin from one species (*utilis)* on qeros, while southern Colombian craftsmen may have utilized resin from the other species *(pastoenses)*. But the two trees may have been sufficiently similar in appearance, and the resin they produced similar in behavior, that the people who collected it could have used raw material from both species assuming they both grew in the collection regions. Our research provides new information on this little-known resin, although the questions regarding the earliest history of its use still remain a matter of speculation