Chuck Hannaford, our retired but still active OAS educator, challenged me to write about archaeology as a foundation for developing critical thinking skills in the next generations. This essay is the result, but it hasn't been easy (and it isn't short). The difficulty stems not from any sense of tenuousness in the connection between archaeology and critical thinking, but instead in the difficulty that arises from the very qualities of the human story that make archaeology so effective as a vehicle for learning. Where to start?

Human societies (including our own) are incredibly complex systems. Societies are made up of individuals with physical and psychological capabilities and needs, with skills and personalities, and with roles within the family and the community. Production (of tools, food, art, knowledge, and ceremony) and reproduction (of family, community, and culture) are the result of individual actions, but those actions are instantaneously part of a network of relationships in which everything is interconnected and interdependent.

Stepping back from the individual, we have to make choices if we want to comprehend the complexity of human society. We can view society from the perspective of economy and its parts. We can look at food: sources, seasonality, nutrition, storage (buffering seasonal variation), trade, cuisine, preparation techniques, consumption patterns, waste, and even inequality (access and distribution). We can look at survival technologies: shelter, hunting, collecting, storing, processing, resource extraction, tools to make tools, textiles, heating, cooling, and transportation. We can look at social variables: labor allocations, task specialization, ownership, valuation, currencies, capital investment, and taxation. Or we can abstract the economy all the way to energy flow models.

But the economic fabric of societies is just a skeleton for so much more. Spirituality, religious institutions, governance (the dynamics of group decision making), education, art, language, music, knowledge seeking (sciences), medicine, morality … Each dimension of human culture can be examined individually or can be a starting point to contemplate everything else.

And then archaeology adds the dimension of time! Human systems are dynamic, both internally and externally. Individuals go through life cycles, from birth to death, with constantly changing roles. Populations grow and crash, the environment changes, resources are depleted, and technological innovation expands the range of human capability. Communities differentiate in language, culture and ideology. Technologies diffuse across (or stop at) borders, migration and assimilation occur, conflicts arise and are concluded at the level of individuals, families, clans, castes, communities, tribes, and nations. Change is the constant in the story of human existence, as is cultural and even biological adaptation.

But we aren’t done yet … The practice of archaeology itself embraces scientific knowledge, techniques, and the scientific method. Observation, analysis, and interpretation are the methods with which we pursue archaeology, and we will use any and every tool we can find in the process. Biology, geology, chemistry, physics, mathematics, engineering, and computer science are our resources and serve as the tools that archaeologists use every day. And yet we can’t prove anything about the past. We can use all of these tools to create models, to argue that one interpretation is better than another, but the answer to every question is only the starting point for the next inquiry.

Archaeology is mysterious and attractive. It allows teachers’ and students’ imaginations to explore ideas creatively, and it allows teachers to guide the class toward any learning goal. We’re happy to have students emerge with an understanding of archaeology as human history, it’s far more important that they have the confidence to ask, explore, and answer any complex and difficult question that they might encounter in adult life.
Events

CALENDAR

FEBRUARY 28
Brown Bag Lunch: A Southwest Archaeologist’s Adventure on the Island of Yap. 12 p.m., OAS. Free.

MARCH 14

MARCH 19 AND 26
FOA Lecture Series: Culture and History of the Southwest: Archaeological Perspectives. Details in this newsletter.

MARCH 21

APRIL 4
Brown Bag Lunch: Yucca as a Raw Material in the Past and Present. 12 p.m., OAS. Free.

APRIL 25
Brown Bag Lunch: Reconstructing the Health of Southwestern People: Evidence, Purpose, and Paradigms. 12 p.m., OAS. Free

MAY 12–15
Explore Salinas Pueblos: A four-day tour of the pueblo and mission ruins in the Salinas area of central New Mexico. Details in this newsletter.

MAY 20–21
Hopi Weekend at the Center for New Mexico Archaeology: Demonstration of dry farming practices, kachina carving, basketry, and weaving by tribal members. Details in this newsletter.

JUNE 18
Zia Agricultural Fields: A strenuous morning hike through Jemez River Valley agricultural field terraces near Zia Pueblo. Details in this newsletter.

EARLY JULY
Jemez Sites: Marlon Magdalena, instructional coordinator for the Jemez Historic Sites, leads a tour. For details, see next newsletter.

SEPTEMBER
Comanche Gap: A strenuous hike to areas with little public access. Details to come.

OCTOBER 6–8
Into the Dinétah Labyrinth: Explore the ruins of AD 600–1000 ancestral Puebloan farming communities just a few miles from Chaco Canyon. Details in this newsletter.

OCTOBER 21
International Archaeology Day at the Center for New Mexico Archaeology: Throw atlatls, shoot bows, make yucca fiber, watch pottery firings, learn about coiled basketry, and speak with working archaeologists. OAS. Free.

NOVEMBER 5
Holiday Auction at Hotel Santa Fe Hacienda and Spa

‘Arrow Dynamics’ Wins Big

Eighth-grader Sydney Pino-Pacheco took first place for her “Arrow Dynamics” project at the Gonzales Community School science fair. Sydney went on to compete at the district level in January.

The Gonzales School judge spent about 30 minutes discussing Sydney’s project with her and stated, “This is a good project! No, this is a great project!”

Sydney was able to answer some very technical questions about measuring the force used to shoot the arrows and about how OAS staff members Isaac Coan, Chuck Hannaford, and Mary Weahkee helped her complete the project.

The judge asked Sydney if she was more interested in engineering or in archaeology. Her response: archaeology. After asking Sydney why she selected this project, Sydney told the judge about a study she performed with an atlatl two years ago.

The judge’s only recommendation was that Sydney construct a machine to shoot the arrows in order to eliminate any human error.

Thanks to everyone who helped Sydney with this project.

Zia Day Trip

The human ability to modify our landscape can be dramatic and even beautiful. A remarkable expression of this process can be seen in the development of extensive agricultural terraces and grid gardens in the hills above the Jemez River Valley on Zia Pueblo lands. A Friends of Archaeology group visited these features back in 2012, and, due to popular demand, we are revisiting this trip.

Ulysses Reid of Zia Pueblo will be our guide. He has also arranged for a feast day-style lunch and brief walking tours of the pueblo after the hike. The hike is STRENUOUS and requires the climbing of steep slopes over rugged terrain. This trip will be offered on Father’s Day, and the Pueblo will host an arts and crafts sale that same day.

For more information or to make reservations, call (505) 982-7799 ext. 6, after 7 a.m., starting April 30. The cost will be $85 for FOA members and $95 for non-FOA members.
Events

**MAY 20-21**

**HOPI WEEKEND**

Raynard Lalo, his mother Dorleen Gashweseoma, his father Valjean Lalo, and his brother Gene Lalo will demonstrate Hopi dry farming practices, traditional kachina carving, and basketry and weaving techniques at a special event May 20 and 21, at the Center for New Mexico Archaeology. The Lalo family is from the Third Mesa village of Hotevilla. Dorleen, Raynard, and Gene belong to the Spider Clan. Valjean belongs to the Roadrunner Clan from Bacavi village. All four members of the Lalo family take part in ceremonial duties at Hotevilla, farm staple crops using Hopi dry farming methods, and supplement their income with their artwork.

**Saturday, May 20**

- Discussion of farming tools and Hopi planting and farming methods.
- Demonstration of field preparation, the sowing of individual crop seeds, and the maintenance of the field, including crop protection from predators and the elements.
- Discussion of Hopi crops and their uses, also harvesting, processing, and illustration of individual crops.

**Sunday, May 21**

- Demonstration of Hopi basketry techniques by Dorleen Gashweseoma. This will include the collecting and processing of materials and the weaving of a basket.
- Introduction to kachina carving by Raynard and Gene Lalo, including a discussion of materials and how these materials are collected, as well as techniques, symbolism, and the importance of kachinas in the Hopi religion.
- Demonstration of Hopi weaving techniques by Valjean Lalo, also a discussion of materials, processing, techniques, symbolism, and uses of individual clothing items.

Both days will include a catered lunch for participants.

The family’s artwork will be on display during the event. Participants are encouraged to ask questions and should return for the second day of the event for a more thorough explanation of the art and the meaning behind it. For tickets, call (505) 982-7799 ext. 5, after 7 a.m., starting April 11. Cost is $95 for one day; $150 for both.

Gene Lalo will demonstrate kachina carving at the event.
Thanks to all of the wonderful and interesting people who attended FOA’s Annual Holiday Party and Auction on Sunday, Nov. 1, at the Hotel Santa Fe Hacienda and Spa. Fabulous auction items brought in $6,352.81 for educational and research activities at the Office of Archaeological Studies. Hotel Santa Fe, as always, provided a wonderful venue and buffet for the event. Special thanks to all the volunteers who helped organize, prepare for, and clean up after the event. Also, a special shout out to Sheri Spaar for the putting together the fantastic slideshow highlighting FOA events from 2016. We couldn’t have done it without all of you.

The next Holiday Party is scheduled for Nov. 5, 2017. Same time, same place. Hope to see you all there! ✨
Friends of Archaeology

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Talks

FOA LECTURE SERIES

CULTURE AND HISTORY OF THE SOUTHWEST: ARCHAEOLOGICAL PERSPECTIVES

The ever-increasing amount of archaeological knowledge of Southwestern culture history is truly remarkable and often renders textbooks obsolete with frustrating speed. The Friends of Archaeology has commissioned a four-part lecture series—Culture and History of the Southwest: Archaeological Perspectives—to be held over two afternoons. The series will summarize the state-of-the-discipline of Southwestern culture history. Each hour-long, illustrated lecture will be followed by 30 minutes of questions, answers, and discussions.

This year’s Friends of Archaeology lecture series will be held Sunday, March 19, and Sunday, March 26, from 1–4 p.m. at the Santa Fe Women’s Club, 1616 Old Pecos Trail. Cost is $45 for one day and $75 for both dates. Call (505) 982-7799 ext. 5, after 7 a.m., starting Feb. 14, for tickets.

INTRODUCTION TO THE LECTURE SERIES

Sunday, March 19
Jeremy Sabloff, Past President and External Professor, Santa Fe Institute

EARLY PEOPLES OF NEW MEXICO AND THE SOUTHWEST: FIRST PEOPLES THROUGH THE INITIAL ADOPTION OF MAIZE

Sunday, March 19
George T. Crawford, Director, Blackwater Draw, National Historic Landmark

Evidence gathered over the past century indicates that humans walked into the New Mexico area at the end of the Pleistocene, around 13,000 years ago. A cooler, wetter climate provided an abundance of game and, coincidentally, conditions favorable for the archaeological preservation of sites and otherwise perishable materials that have shaped our portrayal of Paleoindian peoples. These groups, and their successors, not only flourished but became a consistent part of the landscape and the archaeological record. The early Holocene saw a sudden change in fauna followed by a time of relative stability, which set the stage for the long period of hunter-gatherer lifeways seen across the region. Further climatic change led to harsher conditions, an apparent decrease in human population, and an eventual dependence on plant domestication in some areas.

FORMATIVE FOUNDATIONS OF PUEBLOAN CULTURES THROUGH AD 900

Sunday, March 19
Eric Blinman, Director, Office of Archaeological Studies

Increasing dependence on agriculture, equivalent to the Neolithic revolution of the Old World, created a patchwork of cultural adaptations in the Southwest. Interaction between environment, population density, and technological innovation resulted in distinctive agricultural adaptations across the broad sweep of the Southwest—from canal-based irrigation to dry farming at high elevations. These economic adaptations coincide with the generalized culture areas of Southwestern archaeology. Internal differentiation in stylistic variables also appears to reflect underlying ethno-linguistic variety within those areas. Although still subject to the vagaries of climate variation, ancestral Puebloan peoples honed a resilient lifeway that formed the cores of Pueblo cultures.

FLORESCENCE AND CRISIS IN THE NEW MEXICAN SOUTHWEST: AD 900–1300

Sunday, March 26
Eric Blinman, Director, Office of Archaeological Studies

When agriculture is successful and reliable, it can fuel the development of social and economic complexity. Sustainability of cultural innovation, however, is dependent on the balance between climate variation and community needs. The tenth through thirteenth centuries of New Mexico history represent the best and worst outcomes of climate change. Benign and predictable farming conditions supported the florescence of Mimbres and Chaco, but as the climate changed in ways less suited to reliable agriculture, those cultural patterns were challenged. Climate may not determine how people and cultures respond, but in the Southwest it constrains economic potential, either allowing or requiring adaptation to changed conditions.

BRIDGE TO THE PRESENT: MIGRATIONS AND CULTURAL ADAPTATIONS IN THE POST-AD 1300 SOUTHWEST

Sunday, March 26
John Ware, Executive Director (retired), Amerind Foundation

The climate changes of the twelfth and thirteenth centuries resulted in the dramatic reshaping of the Puebloan world. Economic collapse and social disorganization encouraged migration out of the San Juan and Western Pueblo regions of the Colorado Plateau to more favorable locations for farming in the Rio Grande Valley—along the southern edge of the plateau, from Acoma to Zuni to Hopi, and as far south as southern Arizona. Assimilation, tolerance, and sometimes rejection of migrants is evident in all parts of New Mexico as diverse Puebloan peoples met, intermingled, and interacted to form hundreds of new communities. These interactions among distinct cultural groups created a complex array of shared and divergent traditions. Experimentation with new social and ceremonial institutions continued into the Spanish Colonial period to produce the rich and varied tapestry that make up the Pueblo cultures of today.
Talks

Bag Lunch Schedule

Talks are held Tuesdays at noon at the Center for New Mexico Archaeology. Seating is limited; admission is free. Please visit nmarchaeology.org to confirm our current schedule.

A Southwest Archaeologist’s Adventure on the Island of Yap

Tuesday, February 28
Stephen S. Post, Deputy Director Emeritus, Office of Archaeological Studies

In July and August 2016, Dr. James E. Snead, California State University–Northridge, invited me to join him as part of a research project on the Island of Yap in the Federated States of Micronesia. Located 6500 miles west of Los Angeles, Yap covers only 34 square miles and is the administrative and chiefly center of the Western Caroline Islands chain, which stretches 800 miles to the east. Prior to full-scale European contact in 1885, Yap was a highly stratified, paramount chiefdom with more than 120 villages in 12 districts inhabited by as many as 50,000 people. This highly regulated society constructed homes, community and ceremonial structures, waterworks, and inter- and intra-village stone paths. Origins, village and settlement patterns, and an economic system based on stone money have been the subject of previous archaeological investigations, but James’ project is the first to systematically study a sample of the hundreds of kilometers of stone paths found throughout the island. This talk will introduce Yap, its people and culture, and the 2016 investigation, which led researchers from the coastal tidal flats to the upland savannahs of this exotic and far-flung locale.

The Volcanoes in Your Backyard: The Cerros del Rio Volcanic Field

Tuesday, March 14
Jayne Aubele, Educator and Geologist, New Mexico Museum of Natural History and Science

The Cerros del Rio Volcanic Field (also known as the Caja del Rio Grant), visible from the Center for New Mexico Archaeology, consists of approximately 40 volcanoes and associated lava flows that erupted about 2½ million years ago. The Cerros del Rio Volcanic Field is not part of the Jemez Mountains/Valles Caldera activity but is instead an independent field of volcanoes marking the western margin of the city of Santa Fe. Although the area appears to be merely a cluster of small hills, these volcanoes hold some interesting geological, archaeological, and biological secrets. Jayne Aubele was the first to geologically map and study the field in the 1970s as a graduate student at The University of New Mexico and has a great fondness for her first “field area.”

Into the Eighteenth Century: Late Survival of Rio Grande Glaze Wares

Tuesday, March 21
James L. Moore, Project Director, Office of Archaeological Studies

Conventional wisdom holds that the production of glaze wares in the Middle Rio Grande and the Galisteo Basin ended around 1680, when the Pueblos successfully revolted against Spanish domination and expelled their overlords from New Mexico for 13 years. But was this truly the case? Does this historic event mark the end of glaze ware production? This talk addresses how political events and technological changes may have caused the demise of this decorative technique.

Yucca as a Raw Material in the Past and Present

Tuesday, April 4
Eric Blinman, Director, Office of Archaeological Studies

Yucca fiber has long been a staple of OAS education outreach programs. More recently, OAS has studied yucca fiber’s potential for modern economic development. This presentation explores how yucca fiber and leaves were used in the past based on archaeological materials found throughout the Southwest. It covers “old ground” in terms of artifact forms, evidence for processing, and what has been learned through replication that may or may not be applicable to understanding the past. The presentation also covers “new ground” with comment on what we have learned through economic development experiments.

Reconstructing the Health of Southwestern People: Evidence, Purpose, and Paradigms

Tuesday, April 25
Ann Stodder, Bioarchaeologist, Office of Archaeological Studies

A talk about the skeletal and dental evidence that document the health of past peoples in the Southwest and some new approaches to interpreting these data to understand the lives of individuals and communities.

More Talks to Come

OAS staff members are encouraged to reprise their professional talks at bag lunch events. We also encourage visiting scholars to update us on their research. Please visit nmarchaeology.org to catch our additional spur-of-the-moment presentations.

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**Explore Salinas Pueblos**

A four-day tour of the spectacular pueblo and mission ruins in the Salinas area of central New Mexico is planned for May 12–15, 2017. The Salinas pueblo ruins rest in the shadows of the Manzano Mountains, with Chilili to the north and Gran Quivira to the south. The region takes its name from the salt lakes just east of the pueblo—salt being a major trade item in the area both prehistorically and historically.

Formerly populated by both the Tompiro and Tiwa tribes, the Salinas area has long been regarded as a cultural crossroads between traditional Puebloan cultures to the north, Plains cultures to the east, and the Mogollon culture to the south. The area was also important to Spanish missionaries as it provided access to local populations and served as a major route in the trade of bison hides, salt, and other commodities.

The Friends of Archaeology tour group leaves Santa Fe on Friday, May 12. Later that afternoon, the group explores the National Park Service’s visitors center, the Abo ruins, and some very interesting rock art sites. Friday evening, a special presentation offers additional information about the day’s activities and about other sites the group will visit throughout the trip.

Saturday, the group heads south to several lesser known sites in the region. The journey takes guests through some very rugged terrain and will likely include some strenuous hiking.

On Sunday, the group visits Gran Quivira, Pueblo de la Mesa, and a jacal village ruin. Hiking will be less strenuous Sunday as access to sites is more readily available. Some back-country hiking and trekking is also planned.

The group stops at the Quarai ruins on Monday before making its way out of the Mountainair area and back to Santa Fe.

Hotel and dining arrangements have not yet been made. Details will become available at www.nmarchaeology.org as soon as they are finalized. To sign up for the trip, call the FOA hotline at (505) 982-7799 ext. 6, after 7 a.m., starting April 4. Cost for participants will be $300 for FOA members and $375 for non-members. FOA will contact participants with any additional details regarding lodging and trip pricing by either phone or email.

The Salinas Pueblos trip is rated strenuous and will require hiking, climbing, and long periods of time away from vehicles. No amenities will be available.
TRIP: OCTOBER 6–8

INTO THE DINETAH LABYRINTH
PEUDBLO I AND NAVAJO ARCHAEOLOGY

The region between Bloomfield and Dulce, New Mexico—best known as the homeland of the Navajo or Diné people—has a complex archaeological history. Here, elaborate defensive sites within dispersed communities and rock art depicting the origins of Navajo culture are scattered throughout the narrow canyons.

Less appreciated, by both archaeologists and the public, is the area’s AD 600–1000 record of ancestral Puebloan farming communities. These early farmers of the Dinah region are distinct from their contemporaries in the better known Chaco area a few miles to the west, and the communities themselves appear to represent the ancestors of today’s Jemez people.

Join Chuck Hannaford, Dean Wilson, and Eric Blinman on Oct. 6–8 for three days of site visits along the back roads of the Dinetah. This hike is not strenuous. High clearance vehicles are recommended. Carpooling is highly encouraged. The cost is $255 for FOA members and $290 for non-members ($75 is tax deductible). Call (505) 982-7799 ext. 7, after 7 a.m., starting Aug. 29, to make reservations. Remember, spaces are limited.