

CERAMIC ANALYSIS FOR ARCHAEOLOGISTS

The University of Chicago
Anthropology 36200
Winter 2015
T-Th 10:30-11:50 AM

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This course is designed to expose students to the theories and methods that enable archaeologists to use ancient ceramics to make inferences about the people who originally made and used them. World wide, ceramic materials constitute the overwhelming bulk of evidence preserved in the archaeological record of human societies since the end of the Ice Ages. This fact has ensured that ceramics have attracted a great deal of archaeological research attention. Moreover, it makes it imperative that *all* archaeologists have at least a working knowledge of ceramic analysis, whether or not they become ceramic specialists: we need to know what ceramics can realistically tell us and how to make them talk. However, it is important to remember that, as anthropologists, our primary interest is not really pots, but people. It follows, therefore, that this course is not intended as a narrow "cookbook" approach to technical virtuosity in the laboratory, nor is it geared toward an aesthetic appreciation of pottery. Rather, an attempt will be made to arrive at some reasonable understanding of the kinds of information about ancient society, economy, and culture that can be derived plausibly from pottery and to assess which techniques and strategies may best help us obtain that information.

The class is intended as both a seminar and laboratory course, and the approach to ceramic analysis followed in the course will be an integrated mixture of theoretical discussion and practical application. Class sessions will be of two types. Tuesdays will be devoted to seminar discussions and occasional lectures (beginning in week 4; the first three sessions will be primarily lectures). Thursdays will be spent in the ceramic laboratory and devoted to demonstrations of laboratory techniques and actual analysis of ceramics (each student will be provided with a small collection of sherds from Mediterranean France to be analyzed during the quarter). Readings will include ethnographic and ethnoarchaeological studies of potters and pot users in their social contexts, discussions of the nature of style and systems of classification, discussions of the physical properties of clays and ceramic fabrics, and examples of techniques of analysis of pots and ceramic assemblages.

Prerequisites: Some prior knowledge of anthropology and archaeology will be very helpful. Course enrollment is limited by the facilities of the Ceramics Laboratory, and Anthropology graduate students have priority.

Requirements: Grade evaluation will be based upon 4 criteria:

- 1) Informed participation in class discussions (including formal critiques of readings);
- 2) A brief mid-term exam testing basic definitions and technical knowledge;
- 3) A descriptive analysis of a small collection of shards for which standardized forms will be filled out during the course of analysis and submitted with a brief report at the end of the quarter;
- 4) A 10-page proposal for a field project using ceramics to address an archaeological problem in a specific archaeological context. Due at the end of the term.

Textbooks:

1) *Pottery Analysis: A Sourcebook*, by Prudence Rice. University of Chicago Press (2006). Available at the Seminary Coop Bookstore.

2) Other articles are on reserve on the Chalk site, and most will be available in the Ceramic Laboratory as well. Articles are chosen from a huge available literature in order to give a sense of the range of theoretical approaches and methods. They represent the good, the bad, and the ugly – so give them all a critical reading.

SCHEDULE OF SEMINAR/LAB TOPICS AND READINGS:

Week 1

- January 6:**
- Introduction to the class
 - Basic definitions
 - Purposes of ceramic analysis (descriptive, comparative, interpretive, historical, ancillary, incidental)
 - Techniques of analysis (actualistic, stylistic, technological, compositional)
 - Ceramic properties (decoration, form, fabric, wear, etc.)
 - History of ceramic analysis
- January 8 (LAB):**
- Tour and overview of the Ceramic Laboratories; explanation of laboratory rules and procedures; assignment of study assemblages

Readings:

-Rice: Chapter 1

Week 2

- January 13:**
 - Basics of ceramic technology 1:
 - Raw materials (clays and inclusions)
 - Vessel forming techniques and tools
- **January 15 [Lab]:**
 - Qualitative Analysis I (macroscopic description)
 - Marking ceramic samples
 - Sorting
 - Initial fabric examination
 - Forms, counts, weights
 - The ceramic database

Readings:

- Rice: Chapters 2, 3, 5.1, 5.2, 12, 14.1
- Balfet, H. (1984). Methods of formation and the shape of pottery. In *The Many Dimensions of Pottery*, ed. by S.E. van der Leeuw & A.C. Pritchard. pp. 171-202. University of Amsterdam Press.
- Courty, M.A. & V. Roux (1995). Identification of wheel throwing on the basis of ceramic surface features and microfabrics. *Journal of Archaeological Science*, 22:17-50.
- Bronitsky, G. (1986). The use of materials science techniques in the study of pottery construction and use. *Advances in Archaeological Method and Theory*, 9:209-276.
- Livingstone Smith, A. 2000. Processing clay for pottery in northern Cameroon: social and technical requirements. *Archaeometry* 42: 21-42.
- Rye, O. 1976. Keeping your temper under control: materials and the manufacture of Papuan pottery. *Archaeology and physical anthropology in Oceania* 11: 106-137.
- Tite, M., V. Kilikoglou, and V. Vekinis. 2001. Strength, toughness and thermal shock resistance of ancient ceramics, and their influence on technical choice. *Archaeometry* 43: 301-324.
- van der Leeuw, S. 1993. Giving the potter a choice: conceptual aspects of pottery techniques. In P. Lemonnier, ed. *Technological choices: transformation in material cultures since the Neolithic*. London: Routledge, pp. 238-288.

Week 3

- **January 20:**
 - Basics of ceramic technology 2:
 - Decoration
 - Drying and firing
 - Post-firing treatments
- **January 22 [Lab]:**
 - Qualitative Analysis I (microscopic description)
 - Examination of surface treatment/decoration
 - Hardness and the Moh's scale
 - Color and the Munsell chart

Readings:

- Rice: Chapters 4, 5.3, 5.4, 11, 14.3
- Nicklin, K. (1981). Ceramic pyrometry: two Ibibio examples. In *Production and distribution: A Ceramic Viewpoint*, ed. by H. Howard & E. Morris. pp. 347-359. Oxford: BAR.
- Gosselain, O. 1992. Bonfire of the enquiries: pottery firing temperature in archaeology: what for? *Journal of archaeological science* 19: 243-259.
- Neupert, M. 2000. Clays of contention: an ethnoarchaeological study of factionalism and clay composition. *Journal of archaeological method and theory* 7: 249-272.
- Sillar, B. 2000. Dung by preference: the choice of fuel as an example of how Andean pottery production is embedded within wider technical, social and economic practices. *Archaeometry* 42: 2-20.
- Kaiser, T. & W. Lucius (1988). Thermal expansion measurements and the estimation of prehistoric pottery firing temperatures. In *Pottery Technology: Ideas and Approaches*, ed. by G. Bronitsky. pp. 83-100.
- Soper, R. (1985). Roulette decoration on African pottery: technical considerations, dating and distributions. *African Archaeological Review*, 3:29-51.
- Rigby, V., A.P. Middleton & I.C. Freestone (1989). The Prunay workshop: technical examination of La Tène bichrome painted pottery from Champagne. *World Archaeology*, 21: 1-16.

Week 4

- **January 27:** Description and classification of ceramic variability
 - Typology, taxonomy, seriation
- **January 29 (LAB):** Strategies and practice of description and classification
 - Classifying forms, decorations, fabrics
 - Mediterranean typology
 - Using DICOCER

Readings:

- Rice: Chapters 8, 9, 14.4
- Eerkens, J. and R. Bettinger. 2001. Techniques for assessing standardization in artifact assemblages: can we scale metrical variability? *American antiquity* 66: 493-504.
- Deboer, W., K. Kintigh, and A. Rostoker. 1996 Ceramic seriation and site reoccupation in lowland South America. *Latin american antiquity* 7(3): 263-278.
- Duff, A. 1996. Ceramic microseriation: types or attributes? *American antiquity* 61(1): 89-101.
- Dunnell, R. 1986. Methodological issues in Americanist artifact classification. *Advances in archaeological method and theory* 9: 149-207.
- Hardin, M. 1979. The cognitive basis of productivity in a decorative art style: implications of an ethnographic study for archaeologists' taxonomies. In C. Kramer, ed. *Ethnoarchaeology: implications of ethnography for archaeology*. New York:

- Columbia University Press, pp. 75-101.
- Marquardt, W. 1978. Advances in archaeological seriation. *Advances in archaeological method and theory* 1: 257-314.
 - Miller, D. 1985. *Artefacts as categories: a study of ceramic variability in central India*, pp. 161-183. Cambridge: Cambridge University Press.
 - Rouse, I. 1960. The classification of artifacts in archaeology. *American antiquity* 25(3): 313-323.
- *Py, M. (ed.) (1993). *Lattara 6: DICOCER. Dictionnaire des céramiques antiques (VIIe s. av. n.è. - VIIe s. de n.è.) en Méditerranée nord-occidentale (Provence, Languedoc, Ampurdan)*. A.R.A.L.O.: Lattes.

Week 5

- February 3:** Theories of Style I:
- What is "style" and why is it so important to archaeologists?
 - The concept of "style" and its relationship to technology" and "function": an integrated social view
 - Material style and styles of action
 - Production, choice, and the *chaîne opératoire*
 - Ceramics and "technical systems"
- February 5 (LAB):** Illustration and Photography

Readings:

- Dietler, M. & I. Herbich (1998). Habitus, techniques, style: an integrated approach to the social understanding of material culture and boundaries. In *The Archaeology of Social Boundaries*, M. Stark (ed.), pp. 242-273. Washington DC: Smithsonian.
- Lemonnier, P. (1986). The study of material culture today: toward an anthropology of technical systems. *Journal of Anthropological Archaeology*, 5:147-186.
- Mahias, M.C. (1993). Pottery techniques in India: technical variants and social choice. In *Technological Choices: Transformations in material culture since the Neolithic*, ed. by P. Lemonnier. pp. 157-180. Routledge.
- Lechtman, H. (1977). Style in technology--some early thoughts. In *Material Culture: Styles, Organization, and Dynamics of Technology*, ed. by H. Lechtman & R. Merrill. pp. 3-20. St. Paul: West.

Week 6

- February 10:** -Theories of Style II:
- Contrasting views on the location, functions, meaning, and origin of "style"
- February 12 [Lab]:** -Thin sections: cutting, mounting, polishing

Readings:

- Wobst, M. (1977). Stylistic behavior and information exchange. In *For the Director: Research Essays in Honor of James B. Griffin*, ed. by C. Cleland. pp. 317-342. Ann Arbor, Museum of Anthropology, University of Michigan.
- Dietler, M. & I. Herbich (1989). *Tich Matek*: the technology of Luo pottery production and the definition of ceramic style. *World Archaeology*, 21:148-163.
- Plog, S. (1978). Social interaction and stylistic similarity: a reanalysis. *Advances in Archaeological Method and Theory*, 1:143-182.
- Sackett, J. (1990). Style and ethnicity in archaeology: the case for isochrestism. In *The Uses of Style in Archaeology*, ed. by M. Conkey et C. Hastorf. pp. 32-43. Cambridge University Press.
- Wiessner, P. (1990). Is there a unity to style? In *The Uses of Style in Archaeology*, ed. by M. Conkey et C. Hastorf. pp. 105-112. Cambridge University Press.
- David, N., J. Sterner & K. Gavua (1988). Why pots are decorated. *Current Anthropology*, 29:365-390.
- Gell, A. 1998. Style and culture. In *Art and agency: an anthropological theory*. Oxford: Clarendon Press, pp. 155-220.

Week 7

- **February 17:** -Ceramics and social organization/relations/boundaries: an interpretive key?
 - What can we say? What are the prospects?
 - Ceramics and craft learning: communities of practice
 - Ceramics and the individual/workshop
- **February 19 (LAB):** -Organizing and managing ceramic data, computer databases

Readings:

- David, N. & H. Hennig (1972). *The Ethnography of Pottery: A Fulani Case Seen in Archaeological Perspective*. Addison-Wesley Module 21.
- Herbich, I. 1987. Learning patterns, potter interaction and ceramic style among the Luo of Kenya. *African archaeological review* 5: 193-204.
- Herbich, I., and M. Dietler. 2008. The long arm of the mother-in-law: post-marital resocialization, cultural transmission, and material style. In *Cultural Transmission and Material Culture: Breaking Down Boundaries*, edited by Miriam Stark, Brenda Bowser, and Lee Horne, pp. 223-244. Tucson: University of Arizona Press.
- Lave, J. and E. Wenger (1991). *Situated Learning: Legitimate Peripheral Practice*. Cambridge: Cambridge University Press. Pp 29-37; 47-58; 91-117
- Wallaert, H. (2008). The way of the potter's mother: apprenticeship strategies among Dii potters from Cameroon, West Africa. In *Cultural Transmission and Material Culture: Breaking Down Boundaries*, edited by Miriam Stark, Brenda Bowser, and Lee Horne, pp. 178-198. Tucson: University of Arizona Press.
- Graves, M. (1991). Pottery production and distribution among the Kalinga: a study of household and regional organization and differentiation. In *Ceramic Ethnoarchaeology*, ed. by W. Longacre. pp. 112-143. Univ. of Arizona Press.
- Hardin, M. and B. Mills (2000). The social and historical context of short-term

- stylistic replacement: a Zuni case study. *Journal of archaeological method and theory* 7: 139-163.
- Stark, M., R. Bishop, and E. Miksa. (2000). Ceramic technology and social boundaries: cultural practices in Kalinga clay selection and use. *Journal of archaeological method and theory* 7: 295-331.
- Smith, N. G., A. Karasik, T. Narayanan, E. S. Olson, U. Smilansky and T. Levy (2012). The Pottery Informatics Query Database: a new method for mathematic and quantitative analyses of large regional ceramic datasets. *Journal of Archaeological Method and Theory*.

Week 8

- February 24:** -The social organization and economics of production
 -Modes of production and the issue of “specialization”
 -Ceramics and trade:
 -Modes and patterns of distribution
 -Provenience studies

- February 26 (LAB):** -Petrographic Analysis

Readings:

- Rice: Chapter 6, 10, 13, 14.2
- Peacock, D.P.S. (1982). *Pottery in the Roman World: An Ethnoarchaeological Approach*. pp. 6-51. London: Longman.
- C.L. Costin (1991). Craft specialization: issues in defining, documenting, and explaining the organization of production. *Archaeological Method and Theory*, 3: 1-56.
- Kramer, C. and J. Douglas. 1992. Ceramics, caste and kin: spatial relations in Rajasthan, India. *Journal of anthropological archaeology* 11(2): 187-201.
- Stark, M. (1991). Ceramic production and community specialization: a Kalinga ethnoarchaeological study. *World Archaeology*, 23:64-78.
- Longacre, W.A. (1999). Standardization and specialization: what's the link? In *Pottery and People: A Dynamic Link*, ed. By J.M. Skibo & G.M. Feinman, pp. 44-58. Salt Lake City: University of Utah Press.
- Arnold, D. (2000). Does the standardization of ceramic pastes really mean specialization? *Journal of archaeological method and theory* 7: 333-375.
- Arnold, D., H. Neff, and R. Bishop. (1991). Compositional analysis and “sources” of pottery: an ethnoarchaeological approach. *American anthropologist* 93: 70-90.
- Bishop, R. R. Rands & G. Holley (1982). Ceramic compositional analysis in archaeological perspective. *Advances in Archaeological Method and Theory*, 5:275-330.
- Stoltman, J.B. (2000) The Role of Petrography in the Study of Archaeological Ceramics. In *Earth Sciences and Archaeology*, edited by Paul Goldberg, Vance T.

Holliday, and C. Reid Ferring, pp 297-326. New York: Kluwer Academic/Plenum Publishers.

- Ünlü, E. (2011). A tale of two potting traditions: technological assessment of the Light Clay and the Red Gritty Ware types at Tarsus-Gözlükule (Cilicia-Turkey) at the beginning of the third millennium B.C. *Bulletin of the American Schools of Oriental Research* 362:1-20.

Week 9

-March 3: -Consumption

- Determining ceramic function, use-life, discard
- Ceramics and survey

-March 5 (LAB): -Strategies for ceramic analysis

Readings:

- Rice: Chapter 7
- Braun, D.P. (1983). Pots as tools. In *Archaeological Hammers and Theories*, ed. by J.A. Moore & A.S. Keene, pp. 107-134. New York: Academic Press.
- Bray, T.L. (2003). To dine splendidly: imperial pottery, commensal politics, and the Inca state. In *The Archaeology and Politics of Food and Feasting in Early States and Empires*, T.L. Bray (ed.) pp. 93-142. New York: Kluwer Academic/Plenum Publishers.
- Boudreaux III, E. A. (2010). A functional analysis of Mississippian ceramic vessels from Town Creek. *Southeastern Archaeology* 29(1):8-30.
- Arnold, P. (2000). The organization of refuse discard and ceramic production within contemporary Mexican houselots. *American anthropologist* 92: 915-932.
- Deal, M. (1985). Household pottery disposal in the Maya highlands: an ethnoarchaeological interpretation. *Journal of anthropological archaeology* 4: 243-91.
- Shott, M. (1996). Mortal pots: on use life and vessel size in the formation of ceramic assemblages. *American antiquity* 61(3): 463-82.
- Mills, B. (1999). Ceramics and the social contexts of food consumption in the northern Southwest. In *Pottery and People: A Dynamic Link*, ed. By J.M. Skibo & G.M. Feinman, pp. 99-114. Salt Lake City: University of Utah Press.
- Winther-Jacobsen, K. (2010). The Classical farmstead revisited: activity differentiation based on a ceramic use-typology. *The Annual of the British School at Athens* 105:269-290.
- Heron, C. & R.P. Evershed (1993). The analysis of organic residues and the study of pottery use. *Archaeological Method and Theory*, 5: 247-284.
- McGovern, P.E., J.H. Zhang, J.G. Tang, Z.Q. Zhang, G.R. Hall, et al. (2004). Fermented beverages of pre- and proto-historic China. *Proceedings of the National Academy of Sciences of the United States of America* 101 (51): 17593-98.
- Kobayashi, M. (1994). Use-alteration analysis of Kalinga pottery: interior carbon deposits of cooking pots. In *Kalinga Ethnoarchaeology*, ed. by W. Longacre & J. Skibo, pp. 127-168. Washington, DC: Smithsonian.

Week 10

- March 10:** -Diachronic perspectives
 -Ceramics and history: is there a relationship?
 -Change and conservatism in craft production

- March 12 (LAB):** -Report Preparation

Readings:

- Rice: Chapter 15
- Adams, W.Y. (1979). On the argument from ceramics to history: a challenge based on evidence from medieval Nubia. *Current Anthropology*, 20:727-744.
- Nicklin, K. (1971). Stability and innovation in pottery manufacture. *World Archaeology*, 3:13-48.
- DeBoer, W. (1991). The decorative burden: design, medium, and change. In *Ceramic Ethnoarchaeology*, ed. by W. Longacre. pp. 144-161. Univ. of Arizona Press.
- Roux, V. (2008). Evolutionary trajectories of technological traits and cultural transmission: a qualitative approach to the emergence and disappearance of the ceramic wheel-fashioning technique in the southern Levant. In *Cultural Transmission and Material Culture: Breaking Down Boundaries*, edited by Miriam Stark, Brenda Bowser, and Lee Horne, pp. 82-104. Tucson: University of Arizona Press.
- Kalentzidou, O. 2000. Discontinuing traditions: using historically informed ethnoarchaeology in the study of ceramics. *Journal of archaeological method and theory* 7(3): 165-86.
- Loney, H. 2000. Society and technological control: a critical review of models of technological change in ceramic studies. *American antiquity* 65: 646-688.
- Annis, M. 1985. Resistance and change: pottery making in Sardinia. *World archaeology* 17 (2): 240-255.