

ARCHAEOLOGIST

AT WORK

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Research TOC

THINKING ABOUT THE EVOLUTION OF SOCIETY AND CULTURE

My curiosity about social and cultural change

slowly germinated until it eventually led me away from my early interests in physics, astronomy, and chemistry, to an undergraduate major in anthropology at the University of Michigan. There, stimulated by courses I took from Professor Leslie White, notably his famous “The Evolution of Culture,” and by other courses from the distinguished faculty of that institution, my interests deepened. These experiences piqued my curiosity: Why, and how, had our species developed densely populated, technologically advanced, socially complex societies of large scale—at least in some places—out of the simple, small-scale foraging groups of the Pleistocene?

Another factor was influential to me as I pursued anthropological study and research. During the 1960s and 1970s, a new environmental awareness swept through this country, bringing with it many concerns related to overpopulation, the negative environmental consequences of modern agriculture, and the long-term sustainability of our industrial way of life.¹ Some of the questions raised by the environmental movement overlapped with questions asked by anthropologists of that period who made use of a theory called cultural materialism (or cultural ecology--more, below), for example, what were the past patterns of human population growth, and why had human populations grown? Had overpopulation, environmental deterioration, and competition for scarce resources brought about social and technological change? Could learning about past societies contribute to our ability to devise sustainable human-environment relationships and stable population size in today’s world? It was already apparent more than 30 years ago that supposedly scientifically based population and agricultural policies had failed because they were based on faulty assumptions about human behavior and social change.² Clearly, new knowledge was needed about the human past to evaluate our ideas about the causes and consequences of social change, and it seemed to me that anthropological research had the potential to contribute to an expanded environmental awareness as well as to problem-solving in today’s world.

ARCHAEOLOGICAL INQUIRY

WITHIN ANTHROPOLOGY

Traditionally, from the middle nineteenth century to the present, most of our understanding of long-term change in human

societies was not derived from direct archaeological evidence, but from a comparative method. This approach was based principally on the comparative investigation of ethnographic or historical sources, and involved placing well-described societies along a continuum from small scale and simple to larger scale and more complex. While the ethnographic record is vastly complex, comparativists identified particular societies thought to typify key differences between “stages” of sociocultural evolution in the past (e.g., band, tribe, chiefdom, state).³

The comparative method has been productive in anthropological inquiry, especially so in recent decades, owing to methodological improvements,⁴ but, ideally, comparative inquiry should complement direct archaeological investigation of past periods. However, it was not until after World War II that the potential synergism of comparative and archaeological approaches could be fully realized as new research tools and methods, such as isotopic dating, invigorated archaeological field research and the interpretation of archaeological materials.⁵ Improved methods were coupled with a greater availability of research funding for substantial long-term field projects (especially from the United States National Science Foundation), making it possible to acquire an unprecedented quantity and quality of new information about the human past. Now direct knowledge of past societies from archaeology can, to a greater degree than ever before, supplant the comparative schemes based on ethnographic sources, but comparison based on ethnographic or other sources remains a key research strategy for our discipline.⁶

THE RISE OF CULTURAL MATERIALISM

Beginning during the second half of the twentieth century, archaeologists, with their sophisticated methods and increased funding, were increasingly able to evaluate major theories that had been proposed to explain the transitions between the sociocultural evolutionary stages identified by comparative researchers.

One of the most widely adopted causal theories of the period (but whose antecedents from the 19th century are evident, especially the ideas of Karl Marx) is cultural materialism. Anthropologists, including Leslie White, Julian Steward, Elman Service, Karl Wittfogel, and Marvin Harris, and the economist Esther Boserup, among others,⁷ argued that the material factors, including environment, technology, exchange, production, population growth, and competition for resources, have significant causal significance in social and cultural change, and these ideas informed much of the work done by anthropologists during the 1960s and 70s, and are still embraced by some researchers.⁸ Admittedly, part of the attraction of this theory is that materialist ideas tend to resonate positively in the minds of persons socialized in the assumptions of Western culture that people will attempt to maximizing material well-being, and, in doing so, create culture and society,⁹ so we must carefully and objectively consider the degree to which cultural materialism can offer a valid means to explain social change.

Of the various potentially useful research methods available to the archaeologist, I concluded that a regional-scale approach could be a productive means to evaluate the explanatory usefulness of cultural materialist theory. This method studies behavioral regions that are naturally or culturally bounded territories, such as river floodplains, mountain valleys, or islands. Presumably, within such a region a human population would have adapted over an extended time period to local environmental circumstances. A region-focused approach is able to address materialist concerns such as: How have humans adjusted to the environmental features of a region, over time, through technological, social, and cultural changes? What local environmental factors were most important in determining aspects of change in social organization and culture? Has the environment (for example, climate) remained stable over time, or has it changed,

and what have been the social consequences of environmental change? What has been the long-term history of population growth in the region? Has population stayed below carrying capacity (the number of people that could be sustained, as calculated from the availability of resources like cultivable soil and water), or has population exceeded carrying capacity? If population levels exceeded capacity, what were the social and environmental consequences? One of the most stimulating suggestions of cultural materialist theory was made by Julian Steward and Karl Wittfogel. They suggested that irrigation agriculture in major river floodplains in arid or semi-arid environments would entail the development of centralized social controls (for example, to manage water distribution) fostering the evolution of government in complex society. Ideas like his spurred research efforts in important riverine regions, including Mesopotamia, and influenced the aims of archaeological research in the semi-arid highlands of Mesoamerica where I began my archaeological work.

RESEARCH PROJECTS IN THE BASIN OF MEXICO AND OAXACA, MEXICO

One of the most important region-centered projects ever carried out by anthropologists was already underway by the time I started my graduate studies at the University of Michigan. Eric Wolf, William Sanders, Angel Palerm, and René Millon, among others, proposed and initiated a long-term study of an important Mesoamerican region, the Basin of Mexico. There, a succession of powerful states had developed, including one centered at the famous archaeological site of Teotihuacan, and, later, the Aztec empire that conquered by the Spanish in 1521; today the Basin is the political capital of Mexico and houses Mexico City, one of the world's largest cities. The pre-Hispanic polities had been among the most influential social formations in Mesoamerican civilization, making the Basin an obvious choice for a major long-term research project. Many specialists contributed to the project, but the main research focus was a systematic archaeological settlement pattern survey of the entire region.¹⁰ In semi-arid environments like the Basin of Mexico, remains of ancient habitation sites and other ancient features (defensive walls, irrigation canals, agricultural terraces, public buildings, etc.) typically are visible on the surface except where obliterated by subsequent natural geological processes and human activity (especially, in this case, the massive growth of modern Mexico City). Thousands of archaeological sites were located and recorded using systematic surface survey methods. The sites ranged from the earliest small farming villages after about 1500 BCE to the great pre-Hispanic cities of the Classic period and the later Aztec empire. Ancient human communities show up as scatters of pot sherds, building stone, stone tools, plaster wall fragments, and sometimes more massive features such as pyramid platforms.

I spent three valuable, and enjoyable (but physically challenging) field seasons on the Basin of Mexico archaeological survey, which provided material for my Ph.D. dissertation and helped prepare me for my future research. The regional study methods developed in the course of the Basin of Mexico project proved gratifyingly productive, and

potentially applicable to similar regions elsewhere in Mesoamerica and in other world areas. Although much work remained to be done in the Basin, I decided after three field seasons to apply a similar approach in another important Mesoamerican highland region, the Valley of Oaxaca, in the southern highlands of Mexico. This region saw the growth of the Zapotec state, one of the most influential societies of pre-Hispanic Mesoamerican civilization. There, another long-term, multidisciplinary regional project, Kent Flannery's Oaxaca Human Ecology Project, was in full swing, and clearly would stand to benefit from a systematic archaeological survey like the one I had helped to complete in the Basin of Mexico. Over a period of ten years and six field seasons, my colleagues and I were able to carry out the regional archaeological survey of the core region of Zapotec society, and extensions of the core-zone surveys continue to this day, so that the regional survey now extends from the Valley and adjacent areas north through the Mixteca Alta region, making the area the world's largest intensively archaeologically surveyed region.¹¹

CULTURAL MATERIALISM CHALLENGED

The archaeological surveys of the Basin of Mexico and the Valley of Oaxaca have proven to be among the most successful large-scale regional archaeological studies anywhere, providing an unparalleled record of past human occupation in two of Mesoamerica's most socioculturally significant regions. The results of decades of work are important to anthropological archaeology in many respects, but most importantly, from my point of view, in discovering complex causal factors associated with important episodes of social and demographic change that in many respects do not conform to the predictions of cultural materialist theory. For example, the massive social system that was based at Teotihuacan between CE 200 and 700 concentrated political, economic, and ritual functions of the entire Basin of Mexico, and beyond, primarily in one large capital center. This strongly centered regional structure resulted in the growth of a massive city of more than 150,000 people, but with a comparatively underpopulated rural hinterland. Population growth and agricultural intensification based on irrigation agriculture seem not to have been significant causal factors that would explain why this social formation developed or why it developed this particular pattern of urban settlement.¹²

Another anomalous feature of Teotihuacan society, when viewed in light of cultural materialist theory, was its comparatively egalitarian cultural code that appeared to downplay wealth and power differences; for example, named rulers cannot be identified.¹³ The theories of social evolutionists and cultural materialists postulated that early states were governed by an autocratic elite whose power stemmed from their control of military force and the economy, coupled with their status as "god-kings."¹⁴ The evidence from Teotihuacan, instead, points to a political system in which rulership was muted and appeared to serve the interests of the polity at large, i.e., it was a highly "collective" or "corporate" polity.¹⁵

By nearly the end of the pre-Hispanic sequence, ("Late Postclassic," roughly CE 1200 to 1521), a new arrangement emerged in the Basin of Mexico, "Aztec" society, that was characterized by the growth of a complex system of numerous cities and towns, each providing a variable mix of commercial, political, cultural, and ritual functions.¹⁶ This complex social formation saw a rapid growth in population, to the highest levels of the pre-Hispanic

sequence (over one million in the valley alone), and the development of many new agricultural strategies, including sophisticated water-control facilities for large-scale irrigation projects. How could two social systems, Teotihuacan and Aztec, so unlike one another, evolve in the same region? I infer from discoveries like these that in our earlier cultural ecological theorizing, we had paid too much attention to how humans cope with the environment of their local region, thinking that the process of environmental adaptation alone would lead us to a better understanding of the nature of sociocultural change. While it is evident that environmental factors provide important constraints and opportunities for human actors, we still need to be attentive to the fact that contrastive social arrangements, such as Teotihuacan and Aztec, themselves generate distinct modes of population distribution, natural resource utilization, and technological development. Further, it is evident from the abundant archaeological data collected from the regional surveys that population growth was not a steady, constant factor in human affairs, driving the development of new productive technologies, or bringing about competition for resources, as cultural materialist theory had led us to expect. Instead, it appears that differing social structures resulted in differing demographic patterns; some social systems encouraged growth, while others retarded it, so that, rather than constant population growth, we found alternating phases of growth and decline over the 3,000 year time period.

Toward the end of the pre-Hispanic sequence, especially in the Basin of Mexico, but also in other Mesoamerican regions, we detect a change in consumer behavior (by comparison with earlier Teotihuacan) in which there was more tendency to overtly manifest social standing through the consumption of valuable and highly decorated goods. This behavioral change was accompanied by the growth of the strongly commercialized economy that was a signature feature of the Late Postclassic Period in the Basin of Mexico and in other Mesoamerican regions.¹⁷ Oddly, market participation was ignored or downplayed in cultural materialist theory, and, yet, we now know that participation in emerging market systems influenced many aspects of life in pre-modern complex societies, including population distribution and decisions such as those pertaining to intensification of production. The evidence pointed to the significance of markets in pre-Hispanic Mesoamerica and in other areas where early civilizations developed, but mid 20th century social evolutionists had assumed that commercialization was a late development in human social evolution, mostly pertaining to only the last few centuries of European history, that then was extended outward from Europe with the advent of capitalism.¹⁸ As a result of this Eurocentric thinking, our discipline has invested little in conceptual development or research in this important aspect of the evolution of society and culture in non-Western contexts. Recently, however, there has been a growth of interest in market behavior in pre-modern and non-Western societies.¹⁹

One of the most important aspects of society and culture largely ignored by the environmental adaptation theories was the role played by the population of a region in a larger system of interconnected regional populations. Mesoamerican civilization was a social system that extended all the way from what is now Central America to northern Mexico, and was as much a part of the environment of an important city like Teotihuacan as was its local behavioral region. While cultural ecological research had produced a vast quantity of useful information, by the late 1970s it was becoming clear that a fuller explication of sociocultural change would develop out of a more complete and encompassing theory. A new approach would incorporate the most useful insights and findings of cultural materialism, but go beyond its adaptational and region-centered biases. A more robust

theory would have to have the ability to explain how processes of change at the local level (including those found in households, and villages, and regions), influence, and are influenced by, processes of change taking place at larger spatial scales, including intersocietal interactions over long distances at the scale of whole civilizations (or "world-systems," e.g., Mesoamerican, Central Andean, Greater Mesopotamian, Chinese). This more ambitious research agenda implies a need for a more broadly conceived method and theory, not to mention new kinds of field research.²⁰

NEW DIRECTIONS FOR RESEARCH

The mid-twentieth century was an exciting period when the grand theories of human social evolution were resurrected after a period of particularism and opposition to theory that characterized early 20th century anthropology.²¹ Comparativists and social evolution theorists sought to find ways to develop widely applicable concepts, informed by causal ideas from cultural materialism, that, together, would provide the integrative framework needed for anthropology to arrive at a broad synthetic understanding of human experience over the last 10,000 years. Now, with our greatly expanded store of knowledge and superior analytical techniques, we see shortcomings in their efforts. Yet, at the same time, we realize theirs was an admirable endeavor, and one that we should continue to strive for. To do this we need to incorporate factors not adequately addressed in mid-20th century theory, including subjects such as consumer behavior, markets and marketing, collective action in political evolution, and world-systems, to mention just a few alluded to above. However, taking new directions and mastering new subjects need not imply that we lose all interest in the materialist variables that earlier theories emphasized. There is still a strong sense that our discipline can and should contribute to better understanding of the human past to facilitate environmental problem-solving in the present,²² but, more broadly, a better understanding of the past will contribute to the refinement of our theoretical understanding of humans in other domains of thought and action in addition to those pertaining to environment and other aspects of the material world.

NOTES

1. For example, Paul R. Ehrlich, *The Population Bomb* (New York: Ballantine, 1968); Garrett Hardin, *Population, Evolution, and Birth Control* (San Francisco: Freeman, 1964); Donella and Dennis Meadows, *The Limits to Growth* (New York: Universe Books, 1972); Taghi Farvar and John Milton, eds., *The Careless Technology: Ecology and International Development* (New York: Natural History Press, 1972).
2. For example, Richard W. Franke, "Miracle Seeds and Shattered Dreams," *Natural History* 83 (1974); Mahmood Mamdani, *The Myth of Population Control: Family, Caste, and Class in an Indian Village* (New York: Monthly Review Press, 1973).
3. Kent V. Flannery, "The Cultural Evolution of Civilizations," *Annual Review of Ecology and Systematics* 3 (1972): 399–426; Elman R. Service, *Origins of the State and Civilization: The Process of Cultural Evolution* (New York: W. W. Norton, 1975).
4. For example, the special issue titled "Cross-Cultural and Comparative Research: Theory and Method," *Behavior Science Research* 25 (1991); Ember, Carol, and Melvin Ember, *Cross-Cultural Research Methods* (Lanham, MD.: AltaMira Press, 2001).
5. Described, for example, in Colin Renfrew and Paul Bahn, *Archaeology: Theories, Methods, and Practice* (New York: Thames and Hudson, 2004).
6. In my own work, I have benefited from a combination of archaeological and comparative research, usually alternating between comparative and archaeological projects.

7. Leslie A. White, *The Evolution of Culture* (New York: McGraw-Hill, 1959); Julian H. Steward, *Theory of Culture Change: The Methodology of Multilinear Evolution* (Urbana, IL: University of Illinois Press, 1955); Karl A. Wittfogel, *Oriental Despotism* (New Haven, CT: Yale University Press, 1957); Marvin Harris, *Cultural Materialism: The Struggle for a Science of Culture* (New York: Vintage Books, 1979); Ester Boserup, *The Conditions of Agricultural Growth* (Chicago: Aldine Atherton, 1965).
8. Marvin Harris's *The Rise of Anthropological Theory* (New York: Thomas Y. Crowell, 1968), developed to promote a cultural materialist theory, was the most important history of the discipline at this time, and was reprinted in 2001.
9. Marshall Sahlins makes this point and provides a critique of the extreme materialist position, unfortunately, not a very convincing one, in *Culture and Practical Reason* (Chicago: The University of Chicago Press, 1976).
10. Eric R. Wolf, "Introduction," in Eric R. Wolf, ed., *The Valley of Mexico: Studies in Pre-Hispanic Ecology and Society* (Albuquerque: University of New Mexico Press, 1976); Sanders, Parsons, and Santley, *The Basin of Mexico: Ecological Processes in the Evolution of a Civilization* (New York: Academic Press, 1979); René Millon, *Urbanization at Teotihuacan, Mexico, Volume One: The Teotihuacan Map, Part One: Text* (Austin: University of Texas Press, 1973). Systematic implies that teams of archaeologists walk, closely spaced, over the entire landscape, making it possible to record all visible archaeological sites, including the remains of residential sites ranging in size from individual farms to large urban centers. The history of development of systematic regional archaeological survey and its accomplishments in the Basin of Mexico and elsewhere are discussed in Richard Blanton, ed., *Settlement, Subsistence, and Social Complexity: Essays Honoring the Legacy of Jeffrey R. Parsons* (Los Angeles: Cotsen Institute of Archaeology, the University of California, Los Angeles, 2005); cf. Stephen Kowalewski, "Regional Settlement Pattern Studies," *Journal of Archaeological Research* 16: 225-286 (2008).
11. Richard E. Blanton, *Monte Albán: Settlement Patterns at the Ancient Zapotec Capital* (New York: Academic Press, 1978); Richard Blanton, Stephen A. Kowalewski, Gary M. Feinman, and Jill Appel, *Monte Albán's Hinterland, Part I: The Prehispanic Settlement Patterns of the Central and Southern Parts of the Valley of Oaxaca, Mexico* (Ann Arbor: University of Michigan Museum of Anthropology, *Memoirs* 15, 1982); Stephen A. Kowalewski, Gary M. Feinman, Laura Finsten, Richard E. Blanton, and Linda Nicholas, *Monte Albán's Hinterland, Part II: Prehispanic Settlement Patterns in Tlacolula, Etla, and Ocotlán, The Valley of Oaxaca, Mexico* (Ann Arbor: University of Michigan, Museum of Anthropology *Memoirs* 23, 1989); Andrew Balkansky, Stephen Kowalewski, Verónica Pérez Rodríguez, Thomas Pluckhahn, Charlotte Smith, Laura Stiver, Dmitri Beliaev, John Chamblee, Verónica Heredia Espinoza, and Roberto Santos Pérez, "Archaeological Survey in the Mixteca Alta of Oaxaca, Mexico," *Journal of Field Archaeology* 27: 365-89 (2000).
12. Regarding population growth as a causal factor, see Richard E. Blanton, Stephen A. Kowalewski, Gary M. Feinman, and Laura M. Finsten, *Ancient Mesoamerica: A Comparison of Change in Three Regions*, 2nd rev. ed. (Cambridge: Cambridge University Press, 1993), pp. 155-6; Millon 1973 (cited in fn. 9), pp. 47-9 questions the importance of irrigation agriculture in the rise of Teotihuacan.
13. George Cowgill, "State and Society at Teotihuacan, Mexico," *Annual Review of Anthropology* 26: 129-61 (1997); on the comparatively egalitarian cultural code of Teotihuacan, see Esther Pasztory, *Teotihuacan: An Experiment in Living* (Norman: University of Oklahoma Press, 1997).
14. For example, Elman Service (1975), cited in fn. 3, and Eric Wolf, *Envisioning Power: Ideologies of Dominance and Crisis* (Berkeley: University of California Press, 1999).
15. Richard Blanton, Gary Feinman, Stephen Kowalewski, and Peter Peregrine, "A Dual-Processual Theory for the Evolution of Mesoamerican Civilization," *Current Anthropology* 37:1-14, 65-8 (1996); Richard Blanton and Lane Fargher, *Collective Action in the Formation of Pre-Modern States* (New York: Springer, 2008).

16. Frances Berdan, *The Aztecs of Central Mexico: An Imperial Society* (Belmont, CA: Thomson Wadsworth, 2005); Michael Smith, *The Aztecs*, Second Edition (Oxford: Blackwell, 2003); Frances F. Berdan, Richard E. Blanton, Elizabeth Boone, Mary Hodge, Michael E. Smith, and Emily Umberger, *Aztec Imperial Strategies* (Washington, DC: Dumbarton Oaks, 1996).
17. Michael Smith and Frances Berdan (eds.), *The Postclassic Mesoamerican World* (Salt Lake City: University of Utah Press); on changing consumer behavior, see Richard Blanton, Lane Fargher, and Verenice Heredia Espinoza, "The Mesoamerican World of Goods and Its Transformations," in Richard Blanton, ed., *Settlement, Subsistence, and Social Complexity* (Los Angeles: Cotsen Institute of Archaeology, University of California, Los Angeles, 2005), pages 260-94. In a study combining the Valley of Mexico archaeological data with early colonial Spanish descriptions of the region, I was able to show that the distribution of cities of the last two pre-Hispanic periods is strongly predicted by market location theory, not environmental factors or carrying capacity. See Richard E. Blanton, "The Basin of Mexico Market System and the Growth of Empire," in Frances F. Berdan et al., *Aztec Imperial Strategies* (cited in fn. 16).
18. Karl Polanyi, *The Livelihood of Man* (New York: Academic Press, 1977).
19. At long last, archaeologists are beginning to show an interest in the evolution of markets. For example, in the 2008 annual meeting of the Society for American Archaeology, there were two sessions devoted to pre-Hispanic markets in Mesoamerica, one of which is now a book edited by Christopher Garraty and Barbara Stark: *Archaeological Approaches To Market Exchange in Pre-Capitalist Societies* (Boulder: University of Colorado Press, in press).
20. For example, Christopher Chase-Dunn and Thomas Hall, eds., *Core/Periphery Relations in Precapitalist Worlds* (Boulder: Westview Press).
21. Marvin Harris, *The Rise of Anthropological Theory* (New York: Thomas Y. Crowell, 1968).
22. Sander van der Leeuw and Charles Redman, "Placing Archaeology at the Center of Socio-Natural Studies," *American Antiquity* 67: 597-606 (2002).

Sociocultural evolution, sociocultural evolutionism or cultural evolution are theories of cultural and social evolution that describe how cultures and societies change over time. Most 19th-century and some 20th-century approaches to socioculture aimed to provide models for the evolution of humankind as a whole, arguing that different societies have reached different stages of social development. The most comprehensive attempt to develop a general theory of social evolution centering on the development of sociocultural systems, the work of Talcott Parsons (1902–1979), operated on a scale which included a theory of world history. Another attempt, on a less systematic scale, originated with the world-systems approach. So these are examples of how evolution can shape culture, but we can also think about how culture might shape human evolution. So think about the transitions from humans as a hunter-gatherer society to one in which crops are planted and raised and animals are domesticated about 10,000 years ago. Because these groups didn't move around so much, because they stayed in one place, populations began to grow. And because of this, people became more exposed to outbreaks of disease within these populations. And since the only people who survived and reproduced were those who weren't killed off, culture refers to the way we understand ourselves both as individuals and as members of society, and includes stories, religion, media, rituals, and even language itself. It is critical to understand that the term culture does not describe a singular, fixed entity. Instead, it is a useful heuristic, or way of thinking, that can be very productive in understanding behavior. As a student of the social sciences, you should think of the word culture as a conceptual tool rather than as a uniform, static definition. Just like biological evolution, cultural evolution was thought to be an adaptive system that produced unique results depending on location and historical moment. However, unlike biological evolution, culture can be intentionally taught and thus spread from one group of people to another.